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SPECIAL CONSULAR REPORTS.

PAPER IN FOREIGN COUNTRIES.

U. S. Dep't of Agriculture
JAN 9 1901
Section of Foreign Markets

USES OF WOOD PULP.

VOL. XIX.

REPORTS FROM CONSULS OF THE UNITED STATES, IN ANSWER TO INSTRUCTIONS FROM THE DEPARTMENT OF STATE.

ISSUED FROM THE BUREAU OF FOREIGN COMMERCE, DEPARTMENT OF STATE.

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PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.[*]

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—Commercial Relations, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—Consular Reports, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—Advance Sheets, Consular Reports, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

IV.—Exports Declared for the United States, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months.

V.—Special Consular Reports, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880–81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885–86 (a portion of this work was published as Consular Reports No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887· Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled Special Consular Reports. There are now the following Special Consular Reports:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Files in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Stave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

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[*] Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia, Africa, Australasia, and Polynesia.

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Vol. 19 (1900).—Paper in Foreign Countries; Uses of Wood Pulp.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries; Disposal of Sewage, etc.; Files in Spanish America, Fire and Building Regulations, Gas in Foreign Countries, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation, Soap, etc.; Sericulture, etc.; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

There was also published, in 1899, Proclamations and Decrees during the War with Spain, comprising neutrality circulars issued by foreign countries, proclamations by the President, orders of the War and Navy Departments, and war decrees of Spain.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston makes the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to $20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States. The value of the Indian rupee, although calculated according to law at the value of the pure metal contained therein, has a commercial value above the value of the silver bullion; consequently the value for customs purposes is determined in each case by the consular certificates attached to the invoice of exports from that country to the United States."

The following statements, running from January 1, 1874, to July 1, 1900, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, fluctuated from 77.17 cents in 1874 to 37.4 cents in April, 1897, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, 1882, and 1891–95 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic*.	Gold and silver..	Peso	$0.96,5	Gold—Argentine ($4.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver..	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
British Honduras	do	do	1.00	
Chile	do	Peso	.36,5	Gold—escudo ($1.25), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Costa Rica	do	Colon	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centisimos.
Cuba	Gold and silver..	do	.92,6	Gold—doubloon ($5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver..	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver..	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
Italy	do	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan‡	Gold	Yen	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar	1.00	
Netherlands§	Gold and silver..	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Portugal	do	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia‖	do	Ruble	.51,5	Gold—imperial ($7.718) and ½ imperial ($3.80); silver—¼, ½, and 1 ruble.
Spain	Gold and silver..	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver..	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold 25, 50, 100, 200, and 500 piasters.
Uruguay	Gold	Peso	1.03,4	Gold—peso: silver—peso and divisions.
Venezuela	Gold and silver..	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

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* In 1874 and 1875, the gold standard prevailed.

† The gold standard was adopted October 1, 1892. (See CONSULAR REPORTS No. 147, p. 623.) Values are still, however, frequently expressed in the florin or gulden, which is worth 2 crowns or 40.6 cents.

‡ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

§ See note to table of fluctuating currencies.

‖ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896-97, p. 254.

B.—*Countries with fluctuating currencies, 1874–1890.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.45,3	$0.41,3	$0.40,1	$0.39,8
Bolivia	do	Dollar until 1890; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America	do	Peso	.96,5	.91,8	.91,8	.83,6	....	....
China	Silver	Haikwan tael	1.61	1.61	....	....	....	....
Colombia	do	Peso	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador	do	do	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†	Gold	Pound (100 piasters).	....	....	4.97,4	4.97,4	4.90	4.90
India	Silver	Rupee	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan	Gold	Yen	.99,7	.99,7	.99,7	.99,7	....	....
	Silver		....	....	....	....	.87,6	.86,9
Mexico	do	Dollar	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡	Gold and Silver.	Florin	.40,5	.38,5	.38,5	.40,2	....	....
Peru	Silver	Sol	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia	do	Ruble	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.39,3	$0.37,1	$0.35,9	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America	do	Peso	....	....	....	.69,9	.68	.85
Colombia	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.94,3
India	Silver	Rupee	.37,8	.35,7	.34,6	.32,2	.32,3	.40,4
Japan	Gold	Yen	....	....	.99,7	.99,7	.99,7	.99,7
	Silver		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico	do	Dollar	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru	Silver	Sol	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia	do	Ruble	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1897.				1898.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.47,4	$0.46,8	$0.44,3	$0.41,2	$0.42,4	$0.40,9	$0.41,8	$0.43,6
Central America.	Silver peso	.47,4	.46,5	.44,3	.41,2	.41,4	.40,9	.41,8	.43,6
China	Amoy tael	.76,7	.75,7	.71,7	.66,4	.68,5	.66,2	.67,6	.70,6
	Canton tael	.76,5	.75,5	.71,5	.66,4	.68,3	.66	.67,4	.70,4
	Chefoo tael	.73,3	.72,4	.68,6	.63,7	.65,5	.63,3	.64,6	.67,5
	Chinkiang tael	.74,9	.73,9	.70	.65,1	.66,9	.64,6	.66	.69
	Fuchau tael	.70,9	.70	.66,3	.61,6	.63,4	.61,2	.62,5	.65,3
	Haikwan tael	.78	.77	.73,1	.67,8	.69,7	.67,3	.68,8	.71,8
	Hankau tael	.71,7	.70,8	.67,1	.62,3	.64,1	.61,9	.63,2	.66
	Ningpo tael	.73,7	.72,8	.68,9	.64	.64,3	.63	.65	.67,9
	Niuchwang tael.	.71,9	.71	.67,2	.62,5	.65,9	.62	.63,4	.66,2
	Shanghai tael	.70	.69,1	.65,5	.60,8	.62,6	.60,4	.61,7	.64,5
	Swatow tael	.70,8	.69,9	.66,2	.61,5	.63,3	.61,1	.62,4	.65,2
	Takao tael	.77,2	.76,2	.72,2	.67	.66	.66,6	.68	.71
	Tientsin tael	.74,3	.73,4	.69,5	.64,6	.66,4	.64,1	.65,5	.68,4
Colombia	Silver peso	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Ecuador	do	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
India*	Silver rupee	.22,5	.22,2	.21,1	.19,6	.20,1	.19,1	.19,9	.20,7
Japan	Silver yen	.51,1	.50,5	....	....	....	....	....	....
Mexico	Silver dollar	.51,5	.50,8	.48,2	.44,6	.46	.44,4	.45,4	.47,4
Persia	Silver kran	.08,7	.08,6	.08,2	.07,6	.07,8	.07,5	.07,7	.08
Peru	Silver sol	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Russia	Silver ruble	.37,9	.37,4	....	....	....	....	....	....

Countries.	Monetary unit.	1899.				1900.		
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.
Bolivia	Silver boliviano.	$0.43,9	$0.43,4	$0.44,3	$0.43,6	$0.42,7	$0.43,6	$0.43,8
Central America	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8
China	Amoy tael	.71	.70,2	.71,6	.70,5	.69,1	.70,5	.70,9
	Canton tael	.70,8	.70	.71,4	.70,3	.68,9	.70,3	.70,7
	Chefoo tael	.67,9	.67,2	.68,4	.67,4	.66,1	.67,4	.67,8
	Chinkiang tael	.69,3	.68,6	.69,9	.68,9	.67,5	.68,8	.69,3
	Fuchau tael	.65,6	.65	.66,2	.65,2	.64	.65,2	.65,6
	Haikwan tael	.72,2	.71,4	.72,8	.71,8	.70,3	.71,7	.72,1
	Hankau tael	.66,4	.65,7	.67	.66	.64,7	.65,9	.66,3
	Ningpo tael	.68,2	.67,5	.68,8	.67,8	.66,5	.67,7	.68,2
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8	.66,1	.66,5
	Shanghai tael	.64,8	.64,1	.65,4	.64,4	.63,1	.64,4	.64,8
	Swatow tael	.65,5	.64,9	.66,1	.65,1	.63,9	.65,1	.65,5
	Takao tael	.71,4	.70,7	.72	.71	.69,6	.70,9	.71,4
	Tientsin tael	.68,8	.68	.69,4	.68,3	.67	.68,3	.68,7
Colombia	Silver peso	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8
Ecuador	do	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8
India*	Silver rupee	.20,8	.20,6	.21	.20,7	.20,3	.20,7	.20,8
Mexico	Silver dollar	.47,7	.47,2	.48,1	.47,4	.46,4	.47,3	.47,6
Persia	Silver kran	.08,1	.08	.08,2	.08	.07,9	.08	.08,1
Peru	Silver sol	.43,9	.43,4	.44,3	.43,6	.42,7	.43,6	.43,8

* The commercial value of the rupee to be determined by consular certificate.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovets	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do*	Japan	1.31 pounds.
Do	Java, Siam, and Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chih	China	14 inches.

*More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	6 feet.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Koku	Japan	4.9629 bushels.
Korree	Russia	3.5 bushels.
Kwan	Japan	8.28 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11 3/8 bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Castilian	7,100 grains (troy).
Do	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.
Liter	Metric	1.0567 quarts.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1⅜ acres.
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82 2/7 pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Nicaragua and Honduras	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.85418 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands (hemp)	139.45 pounds.
Do	Philippine Islands (sugar)	140 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Castile	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile, Chile, Mexico, and Peru	101.61 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagen	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acres.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9305 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Tunna	Sweden	4.5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Castile	0.914117 yard.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.417 gallons.
Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

PAPER IN FOREIGN COUNTRIES.

PAPER IN FOREIGN COUNTRIES.

DEPARTMENT INSTRUCTION.

DEPARTMENT OF STATE,
Washington, November 16, 1898.

To the Consular Officers of the United States.

GENTLEMEN: I inclose herewith a series of questions propounded by the American Paper and Pulp Association, with a view to obtaining reports from consular officers as to the manufacture, consumption, etc., of paper in foreign countries. You will please prepare replies, which will be printed in the Consular Reports, covering these interrogatories in so far as they apply to your respective districts.

As the paper industry of the United States is one of great importance, you will please take especial pains to make your report as complete as possible. With reference to the samples, publications, etc., asked for, you will comply as far as practicable with the request as stated in the list of questions, but without incurring any expense. These samples, publications, etc., should be forwarded directly to the Department, for transmission to the American Paper and Pulp Association.

I am, etc.,

ALVEY A. ADEE,
Second Assistant Secretary.

INTERROGATORIES REGARDING PAPER INDUSTRY.

POPULATION.

What is the total population according to the latest census; and present population (estimated)?

What is the percentage of illiterates?

Have the people mechanical traits, so as to become producers of paper?

CONSUMPTION.

What are the uses of paper?

Are there any industries peculiar to the country requiring paper?

What are the classes or kinds of paper used at present?

What are the special requirements as to quality, weights, sizes, etc.?

What are the market prices for each class or kind?

What are the terms of sale?

What are the quantities and values of paper consumed for the whole country, for each class or kind, for each year?

What is the total number of paper firms, companies, or brokers?

What are the names and locations of the principal ones, and their relative importance?

What is the total number of publications of all kinds, and of the several different kinds?

What is the total number of printers?

What is the total number of publishers?

What is the total number of each of the other classes of users of paper?

What are the chief articles manufactured from paper, from pulp, and their several amounts?

Is the consumption of paper likely to increase?

What nationality dominates the paper trade, and what is the relative importance of different nations?

Please answer such of the above questions as apply to articles manufactured from paper.

PRODUCTION.

How much undeveloped water power is there, and what is its location as regards railways and navigable water ways, markets, and sources of materials for paper?

How much developed water power is there?

What fuels are there, what is the cost of each to the manufacturer, and the facilities for their transportation?

What raw materials are there suitable for paper making, such as: First, trees; second, other vegetable fibers, as grasses, etc.; third, rags or waste materials?

What are the available quantities of each?

What is the cost of each to the manufacturer, and the facilities for their transportation?

What are the facilities for making paper machinery, and what, if any, is made?

What is the cost of labor in paper mills, and the efficiency of labor?

What are the quantities and values of paper, of each kind, produced each year for the last five years?

What is the number of paper mills and the output at present of each kind of paper?

What kind of power do they use?

What are the methods of manufacture? Is the paper hand made or machine made?

Are the processes and methods of manufacture modern?

What are the tendencies in production—that is, are the methods improving, and the production likely to increase?

Please answer such of the above questions as apply to pulp mills also.

IMPORTS.

What are the classes or kinds of paper imported?

What are the market prices of each?

What are the sources or countries from which each class of paper comes, and what are the several amounts from different countries?

What are the banking facilities or financial connections with each country?

What are the import duties or tariffs on each class?

What are the mail facilities with each country from which paper comes—that is, the frequency and time occupied? The telegraphic facilities?

What are the quantities and valuations of importations for each year for which statistics are available for each class?

What nationality controls the import business, and what is the relative importance of other nationalities?

What are other countries doing to build up their exports to your district in general, and of paper and pulp in particular?

What openings do you see for American paper, pulp, and articles manufactured from paper?

What course should the United States pursue to build up its exports to your district?

EXPORTS.

What are the classes or kinds of paper exported?

What are the prices of each at point of shipment?

What are the destinations or countries to which each class is exported, and what are the relative amounts to the different countries?

What are the financial connections or banking facilities with each country?

What are the export duties or tariffs on each class?

What are the telegraphic facilities with each country to which paper is sent?

What are the mail facilities with each country to which paper is sent—that is, the frequency and time occupied?

What are the quantities and values of exportations for each year for which statistics are available for each class; sources, date, reliability of the statistics in question?

Please give any other information you may have that will throw light on the paper trade of your district.

Please send any samples, publications, and lists of periodicals containing articles on paper making, or other materials relating to the subject. When publications themselves are not sent, please send title, author, publisher, and date of last edition.

In all cases where figures are given, please state fully what the date of compilation is, the sources, methods of compilation, and the amount of dependence which, in your opinion, can be placed on their accuracy.

If manufactures of paper are included in any of the figures given for "paper," please so state.

SCHEDULE FOR TRANSPORTATION.

Class A (articles used in the manufacture of paper).

1. Rags.
2. Wood for pulp.
3. Ground wood.
4. Chemical fibers.
5. Other fibers or stock.

Class B (products of paper mills).

1. Writing or fine paper.
2. Printing paper for books.
3. Printing paper for newspapers.
4. Wrapping paper.
5. Other grades.

Please ascertain and advise the rates charged per ton, pound, or other customary unit: (1) in carloads, and (2) less than carloads, or in other customary quantities, as follows:

1. On each of the articles in Class A, from domestic points of origin to mills in your consular districts.

2. Rates on each of the articles in Class B, from mills in your consular district to principal domestic market.

3. Rates on each of the articles in Class A, imported from foreign countries to mills in your consular district.

4. Rates on each of the articles in Class B, imported from foreign countries to the markets in your consular district.

(In connection with 3 and 4, give the point of origin, distance, through rate, and division of rate if possible—that is, give the proportion which is paid from point of origin to the port of entry and the proportion which is paid from port of entry to destination, time taken in transportation, and frequency of service.)

5. The rate on each article exported in Class A, from points of origin in your consular district to foreign mills.

6. Rates on each article exported in Class B, from points of origin in your consular district to foreign markets.

(In connection with 5 and 6 give destination, distance, through rates, and division of rate, if possible—that is, give the proportion which is paid from the point of origin to the port of export and the proportion which is paid from the port of export to destination, time taken in transportation, and frequency of service.)

IN GENERAL.

Specify in each case what the method of transportation is—that is, whether all rail, rail and water, or all water. If transported by water, state whether by scheduled line, or by schooner or tramp service, which is irregular. Also specify in each case what nationality controls the (water) carrying trade; also give all terminal charges.

EUROPE.

AUSTRIA-HUNGARY.

VIENNA.

In compliance with Department instructions, I submit the following report on paper in this country.

POPULATION.

The total population of Austria-Hungary, with all its provinces, according to the census of 1890, is 43,233,073. The annual normal increase is calculated at the rate of 0.8 per centum. The percentage of illiterates is, on the average, 401.96 in every 1,000. This is classified as follows:

At the age of—	In every 1,000.	At the age of—	In every 1,000.
6	634.20	21-30	274.06
7	386.29	31-40	281.15
8	301.24	41-50	309.04
9	251.97	51-60	338.14
10	241.27	61-70	338.88
11-20	241.02	Over 70	342.87

CONSUMPTION.

Paper is used here for writing, packing, putting up sugar in loaves, printing, blotting, filtering, making boxes, roofing, lace for decorative purposes, lamp shades, cigarettes, bricks, and household utensils. The textile industry peculiar to the country consumes much paper. The kinds of paper manufactured at present are writing, printing, packing, wrapping, poster, bank-note, tissue, cigarette, mail, bill and document, sugar, drawing, wall, blotting, blue, and filtering paper.

Work is mainly done to order of the purchaser. Market prices for the various kinds fluctuate widely, and the only sort quoted is ordinary printing paper, at from $60 to $64 per metric ton. The more wood the paper contains the cheaper it is, and prices vary with the facilities for transporting to and from the mills.

As a rule, the terms of sale are six months' time or 2 per cent cash. The total value of the paper consumed in this Monarchy is annually about $7,200,000 for the best kinds and about $32,000,000 for the cheaper grades.

There are one hundred and forty-four large paper firms, the principal ones being the following:

Vienna.

"Elbemühl," I. Hegelgasse 15.
Ellisen, Roeder & Co., I. Albrechtsgasse 2.
Fiumaner Papierfabrik, I. Schwarzenbergstrasse 8.
Martin Kink & Co., I. Niebelungengasse 3.
Leykam-Josefsthal Actien Gesellschaft, I. Maximillianstrasse 12. (This is a very important firm, has branches in Agram, in Brünn, in Budapest, in Graz, in Laibach, in Prague, and in Trieste. The firm has representatives in most large cities, and exports to all countries.)
"Moldaumühl," I. Getreidemarkt 12.
"Steyrermühl, I. Reichsrathstrasse 5.
Weiner Bankverein, I. Wallnerstrasse 15.
Neusiedler Actien-Gesellshaft, I. Niebelungengasse 15.
Johann Slonek, I. Schellinggasse 6.
Mürzthaler Papierfabrik, I. Weihburggasse 24.
"Rittmühle," III. Sechskrügelgasse 14.

Budapest.

"Schlöglmühl," Arany-Janos-utzca 10.
M. Diamant & Co., V. Elisabethplato 4.
Erste Ungarische Papierindustrie-Actien-Gesellschaft, V. Merleg-utcza 9.

Budapest—Continued.

Fränkel's Holzstoff- und Papierfabrik V. Arany-Janosgasse 20.
Gustav Roeder & Co., V. Göttergasse 22.
Ignaz Spiro & Söhne, V. Arany-Janosgasse 20.

Graz.

Brüder Kranz, Burgring 8.

Innsbruck.

Haller Maschinenpapierfabrik, Josef Riedl.

Lemberg.

Czerlaner Papierfabrik, Theatergasse.

Linz.

Nettingsdorfer Papierfabrik, Actien-Gesellschaft.

Prague.

"Elbemühl," Heinrichsgasse 9.
Eichmann & Co., Hybernergasse 1034, II.
Franz E. Ledeeer, Heuwagsplatz 2.

Reichenberg.

Niedergrunder Papier- und Pappenfabrik, Anton Wähner.

Trieste.

Fratelli Grego, representative of Franz Lamprecht and Ignaz Dix.

The number of book and music firms, stationers, and circulating libraries throughout the Monarchy is 1,977. There are in Austria-Hungary 1,505 book-printing, 459 lithographing, 49 heliotyping, 27 copperplate-printing, and 49 chemigraphical establishments. The number of publications is 2,147, comprising daily papers, weeklies, and monthlies, in fifteen languages of this Monarchy.

The chief articles manufactured from paper are bags, boxes, decorative laces, cards, envelopes, mats for pictures, emery paper, and playing cards; from pulp, various small utensils, such as jars and pails, tiles for flooring, bricks, and roof covering.

The consumption of paper is likely to increase, but there is at present such an overproduction that a movement is on foot among the manufacturers to reduce the output. The Austrian paper industry has been in a precarious condition for some time, brought about mainly by this overproduction and the growing difficulty attending exportation. Representatives of prominent firms, several stock companies among them, have had frequent meetings to discuss this vital question. Hitherto, twenty-four hours' working time has been the rule in the paper line. The decrease in manufacture is to be reached by a reduction of the working hours. The propositions made tend toward an abandonment of night labor, or an abridgment of the twenty-four hours by six. The manufacturers base the proposed restriction on the ground that most of them now work at a loss. These bad conditions are explained in part by the rising price of wood, a circumstance of much importance for cheap paper especially. The wood is dearer because most of it must be obtained from Sweden. A sufficient amount of wood stuff could not be produced in Austria, for the reason that water power has greatly decreased, owing to infrequent rains in this year. On the other hand, it is pointed out that the paper export, which formerly was very large, especially to India and South America, has decreased considerably, owing to unfavorable transport and freight conditions.

The paper manufacturers are strongly of the opinion that the restriction sought for will be brought about. Together with this, there will probably be a regulation of prices, with a tendency to rise. In case the manufacturers resolve on a decrease in production, an inspection committee will be appointed to see that agreements are kept. When, two years ago, the Sunday-closing law was introduced, it was believed that this would cause a decrease in production. But in order to paralyze the effects of the Sunday rest, the factories forced production, and no difference in the results was perceptible.

The German nationality dominates the paper trade in Austria. The most important provinces in this industry are North Bohemia, Lower Austria, and Styria.

PRODUCTION.

There is undeveloped water power in distant mountainous districts among the Austrian Alps off the railway. Developed water power is estimated at 50,000 horsepower. Coal is the only fuel employed. The only means of transportation is by rail, and freights are high. Raw materials for making paper consist of pine trees, straw, and rags. Wood is cheap, though in some districts the forest regulations for cutting timber are severe. There is railroad transportation everywhere, excepting in the mountains, where wagons are used. There are three machine factories in all Austria, and they turn out excellent work. Most machines in use at present are imported from Germany and Italy.

The cost of labor is from about 90 cents to $1.50 per day for a skilled workman. The labor is efficient.

The number of paper and pulp factories in Austria-Hungary is 310. Paper is made in 194 of these, as follows: Poster in 18, cellulose in 28, cardboard in 14, printing in 51, packing and wrapping in 110, blotting in 22, patent packing in 29, pulp vat in 14, writing in 47, tissue and cigarette in 13, straw and pasteboard in 18, telegram in 4, value in 11, drawing in 9, blue in 9, other specialties in 33, wood board (white and brown) in 97, Jacquard cardboard in 16, pasteboard in 75, rough statuary pasteboard in 18, pressed shavings in 9.

Cellulose is made in 19 factories and wood pulp in 83. The output during the past year of factories from which I was able to procure statistics was:

	Pounds.
From 40 paper factories, collectively	187, 761, 332
From 34 wood-pulp factories, collectively	59, 953, 340
From 15 cellulose factories, collectively	118, 492, 000
From 38 paste and wood board factories, collectively	70, 532, 000
From 2 straw-fiber factories, collectively	4, 273, 500

The kinds of power used are water, steam, and electricity. About 50,000 horsepower comes from water, and from 15,000 to 18,000 from steam and electricity. The greater part of the paper is machine made. Handmade paper is turned out by 22 mills. The processes and methods of manufacture are modern, but the machines require more men than the American apparatus; it takes about twelve good workmen to handle one of the European machines. The methods in manufacture are constantly improving.

IMPORTS AND EXPORTS.

The classes and kinds of paper imported and exported, the quantities and valuations, and the various duties are to be found in the following list of imports and exports for the past five years (1893–1897).

Imports and exports.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
PAPER PULP, BLEACHED AND UNBLEACHED, FROM RAGS (DUTY FREE).				
1897:	*Long tons.*		*Long tons.*	
German Empire	12.3	$1,476.00		
Great Britain	1.8	216.00		
Total	14.1	1,692.00		
1896	20.5	2,460.00		
1895	9.6	1,152.00		
1894	10.7	1,284.00		
1893	21.2	2,544.00		
CELLULOSE, PRODUCED CHEMICALLY, BLEACHED (DUTY 20.3 CENTS PER 220 POUNDS).				
1897:				
America (not otherwise specified)			10.3	$700.40
British India			1.7	115.60
British possessions in the Mediterranean			10	680.00
Bulgaria			10.1	686.80
Cuba			20	1,360.00
France			2,777.3	188,856.40
German Empire	345.5	23,494.00	2,206.4	150,035.20
Great Britain	0.1	6.80	349.4	23,759.20
Greece			10	680.00
Hamburg (free zone)			71.2	4,841.60
Italy			1,557	105,876.00
Roumania			954.2	64,885.60
Russia			2,191.4	149,015.20
Spain			223.3	15,184.40
Switzerland			432.6	29,416.80
Turkey			15.9	1,081.20
Total	345.6	23,500.80	10,840.8	737,174.40
1896	163.1	11,090.80	16,060.4	1,092,107.20
1895	192	13,056.00	13,732.3	933,796.40
1894	436.1	31,399.20	13,666	983,952.00
1893	572.1	41,191.20	14,156.6	1,019,275.20
By sea:				
1897			987.3	67,136.40
1896	21.4	1,455.20	2,344.7	59,439.60
1895			1,412.2	96,641.60
1894			1,655.1	119,167.20
CELLULOSE, PRODUCED CHEMICALLY, UNBLEACHED (DUTY 20.3 CENTS PER 220 POUNDS).				
1897:				
America (not otherwise specified)			10.3	504.40
Belgium			914.6	44,815.60
British India			3.1	152.00
Egypt			13.2	646.80
France			5,535.9	271,259.20
German Empire	105	5,144.80	9,719.8	476,270.00
Great Britain	10.3	504.80	379.7	18,605.20
Greece			23.3	1,141.60
Hamburg (free zone)			423.1	20,731.60
Italy			7,283	156,866.80
Netherlands			20.1	984.80
Roumania			136.4	6,683.60

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
CELLULOSE, PRODUCED CHEMICALLY, UNBLEACHED, ETC.—continued.				
1897—Continued.	*Long tons.*		*Long tons.*	
Russia			829.8	$40,660.40
Servia			4	196.00
Spain			60.3	2,954.80
Switzerland			239.1	11,716.00
Total	115.3	$5,649.60	25,595.7	1,254,189.20
1896	93.8	4,502.40	20,998.3	1,007,918.40
1895	65.7	3,153.60	23,784.7	1,141,665.60
1894	123.5	6,175.20	19,629.1	981,456.40
1893	59.1	3,073.20	15,619.2	812,198.40
By sea:				
1897			769.9	37,725.20
1896			160.9	7,723.20
1895	11.3	542.20	208.9	10,027.20
1894	22.7	1,135.20	288.4	14,420.80
STRAW FIBER, AND THE LIKE (DUTY 20.3 CENTS PER 220 POUNDS).				
1897:				
German Empire	1,785.7	121,427.60		
Greece			0.2	13.60
Hamburg (free zone)	11.4	775.20		
Italy			20.2	1,373.60
Netherlands	310.9	2,113.00		
Russia			20.6	1,400.80
Servia			2.2	49.60
Total	2,108	124,315.80	43.2	2,937.60
1896	1,661.4	116,228.00	5.9	13.20
1895	1,435.7	100,499.20	60.2	4,214.40
1894	703.3	53,450.80	81.9	6,224.40
1893	883.4	68,905.60	40.3	3,144.00
By sea:				
1897	11.4	775.20	20.4	1,387.20
1896	52.3	3,361.20	0.1	7.20
1895			25.1	1,757.20
1894	5.5	618.00	14.1	1,071.60
WOOD PULP, GROUND, PRODUCED CHEMICALLY (DUTY 20.3 CENTS PER 220 POUNDS).				
1897:				
Brazil			31.2	748.80
Bulgaria			27.9	669.60
China			0.3	7.20
Egypt			0.6	14.40
German Empire	25.5	612.00	1,487.9	35,709.60
Great Britain			38	912.00
Greece			11	264.00
Hamburg (free zone)			0.3	7.20
Italy			1,541	36,484.00
Japan			2.6	62.40
Netherlands			24	576.00
Roumania			20.1	482.40
Russia			1,468.8	35,251.20
Servia			28.5	684.00

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
WOOD PULP, GROUND, ETC.—continued.				
1897—Continued.	*Long tons.*		*Long tons.*	
Sweden	20.4	$489.60		
Switzerland			343.5	$8,244.00
Turkey			10.7	256.80
Total	45.9	1,101.60	5,036.4	120,873.60
1896	138.9	3,333.60	4,664.8	111,955.20
1895	5.5	143.20	3,960.8	102,982.00
1894	28.3	821.20	5,813.3	168,586.40
1893	65	1,950.00	5,580.5	167,416.00
By sea:				
1897			22.6	542.40
1896			8.2	196.80
1895			71.3	1,854.00
1894			1,478.9	42,888.40
GRAY BLOTTING AND ROUGH PACKING PAPER, UNDYED.				
Duty $1.20 per 220 pounds.				
1897:				
United States			10	520.00
America (not otherwise specified)			10	520.00
Brazil			8.8	915.20
British India			7.2	374.40
Bulgaria			26.6	1,383.20
Egypt			284.7	14,804.40
France			0.1	5.20
German Empire			129.6	6,739.20
Great Britain			54.8	2,849.60
Greece			156.3	8,127.60
Hamburg (free zone)			3.8	197.60
Italy			56.6	2,943.20
Netherlands			2.1	109.20
Roumania			57	2,964.00
Russia			0.7	36.40
Servia			54.4	2,828.80
Sweden			0.6	31.20
Switzerland			0.3	15.60
Trieste (free zone)			0.2	10.40
Turkey			593	30,836.00
Total			1,456.8	75,753.60
1896	0.2	10.40	1,124	58,448.00
1895			873.9	45,442.80
1894			425.3	23,816.80
1893	0.3	16.80	566.5	31,724.00
By sea:				
1897			1,142.2	59.394.40
1896			716.5	37,258.00
1895			626.1	32,557.20
1894			108.6	6,081.60
By treaty, duty 60.9 cents per 220 pounds.				
1897.				
German Empire	47.8	2,485.60		
Great Britain	0.1	5.20		

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
GRAY BLOTTING, ETC.—continued.				
By treaty, duty 60.9 cents per 220 pounds—C't'd.				
1897—Continued.	*Long tons.*		*Long tons.*	
Italy	39.2	$2,038.40		
Russia	0.1	5.20		
Switzerland	0.3	15.60		
Total	87.5	4,550.00		
1896	153.5	7,982.00		
1895	220	11,440.00		
1894	76.5	4,284.00		
1893	121.7	6,815.20		
By sea:				
1897	6.2	322.40		
1896	26.5	1,378.00		
1895	20.9	1,086.80		
1894	11.6	649.60		
COMMON PASTEBOARD FROM WOOD PULP.				
Duty $1.218 per 220 pounds.				
1897:				
United States			31.2	$1,185.60
Argentine Republic			28.9	1,098.00
Belgium			19.4	737.20
Brazil			39.2	1,489.60
British India			85.8	3,260.40
British possessions in the Mediterranean			20.9	794.40
Bulgaria			78.6	2,986.80
Egypt			598.5	22,743.20
France			0.5	18.80
German Empire			2,981.4	113,293.20
Great Britain			1,710.8	65,010.40
Greece			195.3	7,421.60
Hamburg (free zone)			543.7	20,660.40
Italy			5,354.7	203,478.40
Netherlands			1.9	72.40
Portugal			2	76.00
Roumania			128.3	4,875.20
Russia			204	7,752.00
Servia			69.2	2,629.60
Spain			616.5	23,427.20
Switzerland			872.1	33,140.00
Trieste (free zone)			10	380.00
Turkey			1,542.4	58,611.20
Total			15,135.3	575,141.60
1896			13,665.8	519,300.40
1895			10,831.2	411,588.80
1894			10,922.5	425,978.40
1893	0.5	19.20	10,632	404,018.40
By sea.				
1897			5,511.1	210,942.00
1896			4,396	167,048.00
1895			3,145.1	119,515.20
1894			2,913.5	113,626.80

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
COMMON PASTEBOARD, ETC.—continued.				
By treaty, duty 20.3 cents per 220 pounds.				
1897:	*Long tons.*		*Long tons.*	
Egypt	0.7	$26.80		
German Empire	57.3	2,177.20		
Switzerland	0.2	7.60		
Total	58.2	2,211.60		
1896	173	6,574.00		
1895	201.8	7,668.80		
1894	13.4	522.80		
1893	50.5	1,919.20		
By sea (1897)	0.7	26.80		
OTHER COMMON PASTEBOARD.				
Duty $1.218 per 220 pounds.				
1897 (German Empire)	0.4	16.00		
1896	0.1	4.00		
1895	0.7	26.80		
1894	0.1	4.00		
1893	0.3	10.80		
By treaty, duty 20.3 cents per 220 pounds.				
1897:				
German Empire	962.7	38,508.00		
Switzerland	0.1	40.00		
Total	963.7	38,548.00		
1896	957.1	38,284.00		
1895	673	25,574.80		
1894	435.3	16,542.40		
1893	356	12,816.00		
STRAW PASTEBOARD (BY TREATY, DUTY 40.6 CENTS PER 220 POUNDS).				
1897:				
United States	21.6	734.40		
German Empire	42.9	1,458.40		
Great Britain	0.2	6.80		
Italy	0.3	10.40		
Switzerland	0.1	3.60		
Total	65.1	2,213.60		
1896	119.8	4,073.20		
1895	160.6	5,460.40		
1894	28.8	979.60		
1893	4.2	143.20		
By sea (1894)	0.8	27.20		
PACKING PAPER, SMOOTH OR DYED (BY TREATY, DUTY 60.9 CENTS PER 220 POUNDS).				
1897:				
United States			55	$3,520.20
Africa			9.4	601.60
America (not otherwise specified)			11.9	761.60
Argentine Republic			10.4	665.60
Asia			0.7	44.80

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
PACKING PAPER, SMOOTH OR DYED, ETC.—cont'd.				
1897—Continued.	*Long tons.*		*Long tons.*	
Belgium	0.3	$33.60	4.8	$307.20
Brazil			150.7	9,644.80
British Australia			7.7	482.80
British India			2,225.3	142,415.20
British possessions in the Mediterranean			4.7	300.80
British West Indies			3.1	198.40
Bulgaria			295 8	18,931.20
Chile			9.2	588.80
China			1.7	108.80
Cuba			6	384.00
Denmark			4.2	268.80
Dutch India			2.2	140.80
Egypt			813.9	52,089.60
Fiume (free zone)			0.7	44.80
France			1	64.00
German Empire	586.2	65,664.40	931.7	59,628.80
Great Britain	1.4	156.80	385.5	24,672.00
Greece			385.8	24,691.20
Hamburg (free zone)			1,159.4	74,201.60
Italy	82.2	9,206.40	88.6	5,670.40
Japan			74	4,736.00
Mexico			178.8	11,443.20
Montenegro			1.6	102.40
Netherlands			43.8	2,803.20
Roumania			116.5	7,456.00
Russia	0.1	11.20	6.5	416.00
Servia			323.4	20,697.60
Spain			27.2	1,740.80
Sweden	26.8	3,001.66	3.9	249.60
Switzerland	3.3	369.60	16.3	1,043.20
Trieste (free zone)			26	1,664.00
Tunis			0.8	51.20
Turkey	0.2	22.40	1,620.7	103,724.80
Total	700.5	78,466.00	9,008.9	576,569.60
1896	654.6	73,315.20	9,865.6	631,398.40
1895	483	54,096.00	8,543.1	546,758.40
1894	453.4	50,780.80	9,663	637,761.20
1893	428.1	47,947.20	8,208.4	558,171.20
By sea:				
1897	45.8	5,129.60	5,166.4	330,649.60
1896	86.9	9,732.80	6,928.3	443,411.20
1895	52.5	5,880.00	5,653.6	361,830.40
1894	87.2	9,766.40	5,660.9	373,621.20
PACKING PAPER, VARNISHED OR TARRED (BY TREATY, DUTY 60 CENTS PER 220 POUNDS).				
1897:				
British India			3.9	374.40
Bulgaria			1.7	163.20
Denmark			0.1	9.60
German Empire	9	1,368.00	5.5	528.00
Great Britain	1.1	167.20		
Italy			0.1	9.60
Roumania			0.5	48.00

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
PACKING PAPER, VARNISHED OR TARRED, ETC.—continued.				
1897—Continued.	*Long tons.*		*Long tons.*	
Servia			13.8	$1,324.80
Turkey			4.2	403.20
Total	10.1	$1,535.20	29.8	2,860.80
1896	12.7	1,930.40	31.6	3,033.60
1895	9.6	1,459.20	53.7	5,155.20
1894	5.1	775.20	48	4,608.00
1893	7.9	1,200.60	15.9	1,526.40
By sea:				
1897			8.1	777.60
1896			0.5	48.00
1895			2.2	211.20
1894			4.2	403.20
COMMON UNSIZED PAPER, GRAY, AND ALL UNSIZED PRINTING PAPER (BY TREATY, DUTY $1.218 PER 220 POUNDS).				
1897:				
United States			49	3,332.00
America (not otherwise specified)			13.9	945.20
Argentine Republic			0.2	13.60
Brazil			81.3	5,528.40
British Australia			1.1	74.80
British India			561	38,148.00
British possessions in the Mediterranean			1.4	95.20
British West Indies			2.8	190.40
Bulgaria			826.6	56,208.80
Chile			3.4	231.20
China			0.1	6.80
Colombia			4.1	278.80
Denmark			2	136.00
Dutch India			28.6	1,944,80
Egypt			747.3	50,816.40
France			0.8	54.40
German Empire	29.4	3,528.00	57	3,876.00
Great Britain	3.2	384.00	89.3	6,072.40
Greece			453.9	30,865.20
Hamburg (free zone)			93.8	6,378.40
Italy	1.8	216.00	23.3	1,584.40
Japan			32.7	2,223.60
Mexico			11.4	775.20
Netherlands			56.5	3,842.00
Norway			3.5	238.00
Peru			2.3	156.40
Portugal			0.2	13.60
Roumania			323.9	22,025.20
Russia			5.1	346.80
Servia			806.8	64,862.40
Spain			7.6	516.80
Switzerland			3.7	251.60
Trieste (free zone)			28.4	1,931.20
Tunis			1.3	88.40
Turkey			1,195.9	81,321.20
Total	34.4	4,128.00	5,520.2	375,373.60

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
COMMON UNSIZED PAPER, ETC.—continued.	*Long tons.*		*Long tons.*	
1896	15.3	$1,622.00	5,641.4	$394,898.00
1895	14.3	1,516.00	5,756.2	408,592.80
1894	26.6	2,820.00	4,906.9	343,486.00
1893	22.7	2,548.00	6,420.9	462,304.80
By sea:				
1897	1.5	180.00	3,074.7	209,079.60
1896	1.9	201.60	2,807.5	196,525.20
1895	2	212.00	2,688	189,428.80
1894	0.3	32.00	2,231	156,170.80
WRITING PAPER (BY TREATY, DUTY $1.218 PER 220 POUNDS).				
1897:				
United States	1.6	185.60	104.5	12,122.00
Algiers			0.9	104.40
America (not otherwise specified)			30.7	3,561.20
Argentine Republic			168.5	19,546.00
Asia			6.3	730.80
Belgium			181.4	21,042.40
Brazil			223.6	25,937.60
British Australia			0.6	69.60
British India			706.5	81,954.00
British possessions in the Mediterranean			4.6	533.60
British West Indies			1	116.00
Bulgaria			434.1	50,355.60
Chile			15.5	1,798.00
China			2.7	313.20
Colombia			1.3	150.80
Denmark			16.4	1,902.40
Dutch India			7.4	858.40
Egypt			903.3	104,782.80
France	11.9	1,376.40	43.6	5,057.60
German Empire	37.1	4,303.60	187.8	21,784.80
Great Britain	4.5	522.00	1,174.4	136,230.40
Greece			296.7	34,417.20
Hamburg (free zone)			902.6	104,701.60
Italy	1.1	127.60	95.6	11,089.60
Japan			10.7	1,241.20
Mexico			5.9	684.40
Montenegro			4	464.00
Netherlands	7.3	846.80	571.6	66,305.60
Norway			22.1	2,563.60
Peru			5.2	603.20
Portugal			14.2	1,647.20
Roumania			664.6	77,093.60
Russia	0.1	11.60	12	1,392.00
Servia			320.2	37,143.20
Spain			32.8	3,804.80
Sweden			25.1	2,911.60
Switzerland	3.3	386.80	373.1	43,279.60
Trieste (free zone)			4	464.00
Tunis			12.7	1,473.20
Turkey			1,969.9	228,508.40
Total	66.9	7,760.40	9,558.1	1,108,739.60

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
WRITING PAPER, ETC.—continued.	*Long tons.*		*Long tons.*	
1896	47.1	$6,028.80	8,364	$1,003,680.00
1895	39.7	5,240.40	8,670.8	1,040,496.00
1894	28	3,696.00	9,927.8	1,171,484.40
1893	20.3	2,680.00	9,531.5	1,143,780.00
By sea:				
1897			5,231.6	606,865.60
1896			4,861.8	583,416.00
1895			4,534.1	644,092.00
1894			5,887.2	694,692.80
CIGARETTE, COPY, TISSUE, AND FLOWER PAPER IN SHEETS (BY TREATY, DUTY $1.218 PER 220 POUNDS).				
1897:				
United States	0.3	90.00		
France	89.7	26,910.00		
German Empire	116.4	34,920.00		
Great Britain	0.6	180.00		
Italy	0.8	240.00		
Switzerland	5.3	1,590.00		
Total	213.1	63,930.00		
1896	220	66,600.00		
1895	159.7	45,993.60		
1894	187.7	54,057.60		
1893	193.1	55,612.80		
By sea:				
1897—				
France	25.2	7,560.00		
Italy	0.8	240.00		
Total	26	7,800.00		
1896	35.2	10,560.00		
1895	13.7	3,945.60		
1894	34.7	9,993.60		
ENVELOPES, LETTER PAPER, WITH OR WITHOUT ENVELOPES, IN BOXES, ETC. (BY TREATY, DUTY $6.09 PER 220 POUNDS).				
1897:				
Brazil			0.1	32.00
British India			9.9	3,168.00
Bulgaria			17	5,440.00
Chile			0.6	192.00
Denmark			0.3	96.00
Egypt			2.9	928.00
France	0.3	102.00	0.4	128.00
German Empire	6.2	2,108.00	61.7	17,276.00
Great Britain	0.5	170.00	0.3	90.00
Greece			0.2	64.00
Hamburg (free zone)			2	640.00
Italy	0.4	136.00	0.7	392.00
Netherlands			0.6	234.00
Roumania			7.9	2,528.00
Russia			17.7	7,788.00

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
ENVELOPES, LETTER PAPER, ETC.—continued.				
1897—Continued.	*Long tons.*		*Long tons.*	
Servia			6.8	$1,632.00
Spain			0.1	32.00
Switzerland	0.2	$68.00	5.6	2,016.00
Turkey			20.5	5,740.00
Total	7.6	2,584.00	155.3	48,170.00
1896	7.3	2,482.00	131.2	41,912.00
1895	7.6	2,584.00	144.8	44,756.00
1894	7.7	2,618.00	140.1	38,203.60
1893	7.9	2,686.40	204	65,296.00
By sea:				
1897	0.2	68.00	34.1	10,092.00
1896	0.1	34.00	6.1	1,928.00
1895	0.2	68.00	4	1,252.80
1894	0.3	102.00	13.3	3,674.00
WALL PAPER (BY TREATY, DUTY $7.038 PER 220 POUNDS).				
1897:				
Belgium	0.2	60.00	0.1	16.00
Bulgaria			1.6	256.00
France	23.6	7,080.00	0.6	96.00
German Empire	320.2	96,060.00	6.8	1,088.00
Great Britain	23.3	6,090.00		
Greece			5	800.00
Hamburg (free zone)			0.3	48.00
Italy	0.4	120.00	2.6	416.00
Netherlands	0.4	120.00		
Roumania			3.5	560.00
Russia			1.3	208.00
Servia			0.9	144.00
Sweden	0.1	30.00		
Switzerland	2	600.00		
Turkey	0.1	30.00	3	480.00
Total	370.3	111,090.00	25.7	4,112.00
1896	347.8	184,340.00	27.4	4,384.00
1895	331.2	99,360.00	32.2	5,152.00
1894	338.7	101,610.00	26.4	4,752.00
1893	263	78,900.00	33.1	7,018.00
By sea:				
1897	5.9	1,770.00	8.5	1,360.00
1896	3.2	960.00	10.9	1,744.00
1895	6.2	1,860.00	8.9	1,424.00
1894	2.1	630.00	7.9	1,422.00
ALL OTHER PAPERS NOT SPECIALLY DESIGNATED (BY TREATY, DUTY $1.218 PER 220 POUNDS).				
1897:				
United States	3.1	558.00	47.1	6,594.00
America (not otherwise specified)			8.1	1,134.00
Argentine Republic			15.1	2,114.00
Asia			0.1	14.00
Belgium	0.4	72.00	3.8	532.00
Brazil			58.8	8,232.00

Imports and exports—Continued.

From and to.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
ALL OTHER PAPERS, ETC.—continued.				
1897—Continued.	*Long tons.*		*Long tons.*	
British Australia	....	....	3.4	$476.00
British India	....	....	797.1	111,594.00
British possessions in the Mediterranean	....	....	0.5	70.00
Bulgaria	....	....	142.2	19,908.00
Colombia	....	....	1.9	266.00
Denmark	....	....	2.1	294.00
Dutch India	....	....	1.6	224.00
Egypt	....	....	86.6	12,124.00
France	26.2	$4,716.00	14.1	1,974.00
German Empire	479	86,220.00	162.4	22,736.00
German protectorate in Africa	....	....	0.1	14.00
Great Britain	44.1	7,938.00	146.7	20,538.00
Greece	....	....	24.9	3,486.00
Hamburg (free zone)	....	....	232.2	32,508.00
Italy	73.1	13,158.00	17.4	2,436.00
Mexico	....	....	0.3	42.00
Montenegro	....	....	0.4	56.00
Netherlands	7.3	1,314.00	22.2	3,108.00
Peru	....	....	0.8	112.00
Roumania	....	....	127.5	17,850.00
Russia	0.1	18.00	8.8	1,232.00
Servia	0.2	36.00	27.8	3,892.00
Spain	0.4	72.00	0.2	28.00
Sweden	2.7	486.00	....	....
Switzerland	18.8	3,384.00	18.8	2,632.00
Turkey	2.7	486.00	165.2	23,128.00
Total	658.1	118,458.00	2,138.2	299,348.00
1896	603.8	114,544.00	2,317.4	324,436.00
1895	455.1	81,918.00	2,287.7	320,278.00
1894	401.2	72,216.00	2,887.2	404,208.00
1893	341.5	61,470.00	3,195	447,300.00
By sea:				
1897—				
France	0.3	54.00	....	....
German Empire	0.1	18.00	....	....
Great Britain	0.2	36.00	....	....
Italy	11.6	2,088.00	....	....
Turkey	2.7	486.00	....	....
Total	14.9	2,682.00	1,087.8	152,292.00
1896	14.9	2,682.00	1,071.6	150,024.00
1895	15.6	2,808.00	1,066.5	149,310.00
1894	17.9	3,222.00	1,094.9	153,286.00

BANKING, POSTAL SERVICE, ETC.

The banking facilities with the various countries are those that obtain in every civilized land. The Anglo-Austrian Bank in this city transacts most foreign business. The telegraph is excellent, and the mail connections with different parts of the world are detailed in the following table:

Mail facilities of Vienna.

With—	Deliveries in Vienna.	Delivered at destination in—
Athens	Daily	4 days.*
Australia	do	30 to 36 days.
Berlin	5 times a day	12 hours.
Berne	2 times a day	26 hours.
Brussels	3 times a day	30 hours.
Christiania	4 times a day	50 hours.
Constantinople	Daily; 3 times a week by Orient Express.	48 hours.
Copenhagen	4 times a day	40 hours.
Egypt	Daily	6 days.*
The Hague	3 times a day	30 hours.
Hamburg	5 times a day	18 hours.
Japan	Daily; via New York or Italy	35 to 40 days.
London	3 times a day	36 hours.
Lisbon	do	4½ days.
Madrid	do	4 days.
Paris	do	24 hours.
Rome	2 times a day	30 hours.
Stockholm	4 times a day	37 hours.
St. Petersburg	2 times a day	48 hours.

* From seacoast ports three to four times a week.

PUBLICATIONS.

(1) Buchdrucker-Zeitung; editor, Joh. B. Hamberger; VI. Magdalenstrasse 16; appears every Thursday; Vienna.

(2) Centralblatt für die Oesterr-Ungarische Papierindustrie; editor, Joh. Markowich; I. Niebelungengasse 1; appears twice every month, on the 1st and 15th; Vienna.

(3) Papierarbeiter; editor, Emerich Eichinger; XII. Breitenfurterstrasse 5; appears once a month; Vienna.

(4) Papier- und Schreibwaren-Zeitung; editor, Adolf Altman; II. Kl. Mohrengasse 7; appears twice a month; Vienna.

(5) Papierhändler-Zeitung; editor, H. Diezel; IV. Favoritenstrasse 54; appears once a month; Vienna.

(6) Der Oesterr-Ungarische Papier und Schreibwarenhandel; editor, A. W. Müller; XVIII. Hockegasse 20; Vienna.

(7) Adressenbuch der Papier-, Halbstoff- und Pappenfabriken Oesterreich-Ungarns; publisher, Joh. Markowich, secretary of the Union of Austria-Hungarian Paper Manufacturers; I. Niebelungengasse 1; published every three years; last edition, 1898; Vienna.

(8) Adressbuch für den Buch-, Kunst-, Musikalienhandel und verwandte Geschäftszweige der österreicisch-ungarischen Monarchie; published by Moritz Perles: I. Seilergasse 4; Vienna; last edition, 1898–1899.

SCHEDULE FOR TRANSPORTATION.

Through rates per 220 pounds.

From and to.	Piece goods.	Carloads of 11,000 pounds.	Carloads of 22,000 pounds.
Vienna to Trieste.			
Class A:			
Rags	$1.02	$0.72	$0.35
Wood for pulp	1.02	.72	.35
Ground wood	1.02	.72	.35
Chemical fiber	1.42	.79	.69
Class B:			
Writing paper	1.02	.72	.69
Printing paper	1.02	.72	.69
Wrapping paper	1.02	.72	.47
Vienna to Prague.			
Class A:			
Rags	.64	.46	.21
Wood for pulp	.64	.46	.21
Ground wood	.64	.46	.21
Chemical fiber	.81	.81	.81
Class B:			
Writing paper	.64	.46	.46
Printing paper	.64	.46	.46
Wrapping paper	.64	.46	.46
Vienna to Graz.			
Class A:			
Rags	.43	.36	.18
Wood for pulp	.43	.36	.18
Ground wood	.43	.36	.18
Chemical fibers	.56	.39	.35
Class B:			
Writing paper	.43	.36	.35
Printing paper	.43	.36	.35
Wrapping paper	.43	.36	.35
Vienna to Hamburg.			
All the way by rail:			
Class A—			
Rags	1.75	1.18	.54
Wood for pulp	1.75	1.18	1.08
Ground wood	1.75	1.18	1.08
Chemical fibers	1.85	1.61	1.42
Class B—			
Writing paper	1.75	1.07	.90
Printing paper	1.75	1.07	.90
Wrapping paper	1.75	1.07	.90
By rail and Elbe tugboat:			
Class A—			
Rags	1.43	1.00	.46
Wood for pulp	1.43	1.00	.90
Ground wood	1.43	1.00	.90
Chemical fibers	1.66	1.31	1.19
Class B—			
Writing paper	1.43	.95	.69
Printing paper	1.43	.95	.69
Wrapping paper	1.43	.95	.69
Vienna to Rotterdam.			
All the way by rail:			
Class A—			
Rags	1.82	1.26	.59
Wood for pulp	1.82	1.26	1.12
Ground wood	1.82	1.26	1.12
Chemical fibers	1.98	1.67	1.48

Through rates per 220 pounds—Continued.

From and to.	Piece goods.	Carloads of 11,000 pounds.	Carloads of 22,000 pounds.
Vienna to Rotterdam—Continued.			
All the way by rail—Continued.			
Class B—			
Writing paper	$1.82	$1.14	$0.98
Printing paper	1.82	1.14	.98
Wrapping paper	1.82	1.14	.98
By rail and Rhine tugboat:			
Class A—			
Rags		1.07	.50
Wood for pulp		1.00	.71
Ground wood		1.00	.71
Chemical fibers		1.38	1.24
Class B—			
Writing paper		.86	.74
Printing paper		.86	.74
Wrapping paper		.86	.74

Rates per 40 cubic feet to New York.

Class.	From Hamburg and Rotterdam.	From Trieste.
Class A:		
Rags	$2.43 to $3.20	$4.87 to $6.09
Wood for pulp	2.43 to 3.65	3.66 to 4.86
Chemical fibers	5.00	7.80 to 8.92
Class B:		
Writing paper	3.00	2.92 to 4.86
Printing paper	3.00	2.92 to 4.86
Wrapping paper	3.00	2.92 to 4.86

WHOLESALE VIENNA MARKET VALUES, FROM LATEST QUOTATIONS.

COAL.

From the Ostrau-Dombrau-Karwin district.

Piece coal	per long ton	$4.80
Dice coal	do	4.80
Nut coal	do	$4.54 to 4.80

From the Moravian-Rossitz-Zbeschua-Oslovan district.

Smith coal:		
First quality	per long ton	5.48 to 5.52
Second quality	do	4.95 to 4.99

From the Prussian-Silesian district.

Piece coal	per long ton	4.80 to 4.84
Nut coal	do	4.81
Small coal	do	3.77
Second quality	do	.35

RAGS.

Hungary (Vienna prices).		
White linen	per 220 pounds	$5.27 to $5.67
White cotton	do	4.66 to 5.00
Half-white linen	do	.85 to 4.25
Packing, fine	do	3.14 to 3.44
Packing, coarse	do	2.74
Blue linen	do	3.04
Cotton:		
White and half white	do	2.75
Blue	do	1.30
Colored	do	65 to 1.05
Galicia (local prices).		
White and half white	per 220 pounds	3.24 to 3.44
Packing, common	do	.91 to 1.11
Calico	do	.81 to 1.00
Upper Austria (local prices).		
White, first quality	per 220 pounds	5.07 to 5.67
Half white	do	3.65 to 3.95
Cotton, best quality white	do	4.46 to 4.56
Lower Austria (local prices).		
White, mixed	per 220 pounds	2.13 to 2.33
Cotton, white and half white	do	2.63 to 2.93
Colored calico	do	1.21 to 1.31
Jute	do	.71 to .81

ACKNOWLEDGMENTS.

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CARL BAILEY HURST,
Consul-General.

VIENNA, *February 18, 1899.*

REICHENBERG.

POPULATION.

The population of the Reichenberg consular district, including the Haida agency, was, according to the last census taken nine years ago, about 2,000,000. It is estimated to be 6 per cent greater at present.

The number of illiterates is a fraction under 3 per cent of the population above the school-going age.

The people of this district are mostly engaged in manufacturing pursuits, as were their ancestors for generations before them. Naturally, they have mechanical traits and exhibit taste and ingenuity in the production of a great variety of articles, including paper.

CONSUMPTION.

Paper is used for all the various purposes common in the United States, and the classes and kinds are essentially the same here as there. I am aware of no industries peculiar to this country requiring paper.

The market prices for the kinds of paper in most common use are as follows, per 100 kilograms (220.46 pounds): Printing paper, $6 to $10 ; celluloid paper, for bags, etc., $8 to $10; wrapping and packing paper, $5 to $10; cigarette paper, $20 to $40. The price of writing paper is 14 to 60 cents per 100 sheets; envelopes, 8 cents to $1.13 per 100.

The terms of sale are usually three months' time, or 2 per cent discount for cash.

I can find no statistics giving the quantities and values of paper consumed per year in this country. Nothing more definite can be said than that the quantity is less—perhaps by one-half—than would be used by a population of equal size in the United States. Newspapers are less numerous here in proportion to population, and the comparative poverty of the working classes makes letter paper a luxury almost prohibited to many people.

The total number of paper firms, companies, and brokers in this consular district is 112. The addresses of the principal ones are as follows, their relative importance being in the order here given:

Franz Scheffel, Reichenberg.
Friederich Stein, Königgratz.
Arens & Knauschner, Tetschen.
Gustav Seeger, Reichenberg.
Rob. Peuker, Reichenberg.
A. Terreles, Aussig.
Johann Schors, Teplitz.
S. Seidemann, Teplitz.
A. Stein, Teplitz.
S. Teweles, Leitmeritz.
Ferd. Martin, Leitmertz.
Edwin Goldberg, Warnsdorf.
Josef Ressel, Trautenau.
Dolanscky & Hecker, Gablonz.
Carl Fischer, Brüx.
Carl Gebauer, Friedland.
Albert Fuchs & Co., Arnau.
Adolf Herter, Bömisch Leipa.
Heinrich Pfeifer, Rumburg.
I. Matena, Königinhof.

There are 97 periodical publications in this district. Fifty are newspapers—20 daily, 10 semiweekly, and 20 weekly. The following periodicals are issued semimonthly or monthly: Eleven industrial, 12 official, 5 medical, 4 educational, 2 scientific, 2 stenographic, 2 charitable, 1 religious. As yearly publications appear 8 calendars, similar to the American newspaper almanacs. In the district are 91 printers—that is, printing establishments—and 80 publishers. Other principal users of paper are, in approximate numbers, 2,500 stores, 1,000 lawyers, 300 banks, and 250 photographers. The consumption of paper is not likely to materially increase.

Bags and boxes are made of paper, but it is impossible to state the quantities. The glass industry consumes immense numbers of paper boxes, practically all of which are made in this district.

In connection with import statistics, which follow, appears a statement of the relative importance of different nations in the paper trade of this country.

PRODUCTION.

There is an immense amount of developed water power in this district, and not much that is undeveloped. Every stream large enough to be called a river is split into as many little mill races as it will stand, each race turning the wheels of one or more factories, according to circumstances. Aided by dams, many small brooks furnish power for at least the partial propulsion of factory machinery, being supplemented by steam when necessary.

What little undeveloped water power exists is distant from railways and navigable water ways, but is generally near such sources of materials for paper as pine forests.

Coal is the fuel used in paper mills and costs from $2.75 to $3.50 a ton at the mills. To some, it must be hauled by wagons several miles from the nearest railway station. The railway haul is at the utmost not over 50 miles, as the coal is mined in Bohemia or at some near point in Germany.

Raw materials are abundant and close at hand. The paper mills are near pine forests. In less abundance other vegetable fibers are available, but they are not used here in paper making. Rags are gathered from the territory surrounding a factory, and the supply apparently satisfies the demand. Rags cost a third of a cent a pound.

Paper mills which do not make their own pulp buy it from pulp mills in the district. None seems to be imported.

No paper machinery is made in this district.

For labor in paper mills, men are paid, on an average, 40 cents and women 30 cents a day. The labor appears to be efficient.

No statistics are obtainable which give the quantities and values of paper produced annually in this district; and it is impossible to make an estimate, as some of the 28 paper mills refuse to give any information whatever regarding their output.

Both steam and water are used as power, and occasionally an electric motor is found.

All the paper is machine made, none whatever being made by hand. The processes and methods of manufacture in some mills are modern; in others, antique.

In a typical mill of the best class which I visited, the entire process, from the grinding of the wood and rags into pulp to the sheet of printing paper, letter paper, paper bag, school copy book, and ruled account book, is performed. A department equipped with type and presses prints addresses of business firms on ordinary paper bags, celluloid candy bags, etc. Large orders for these articles from Vienna firms were being filled on the day of my visit. This factory requires half a dozen buildings, covers several acres of ground, and is fitted with modern machinery. Water, steam, and electricity are all used for motive power. This mill has been in operation fifty years, but the policy of its management has always been to use the latest devices and improvements. The older mills generally, however, are behind the times in equipment.

On the whole, it can not be said that methods are improving. The mill described above is exceptional.

The production is not likely to increase beyond the demands of a slowly growing population. In this district, there are seven pulp mills.

IMPORTS.

Practically no paper is imported to this district, except fine grades of writing and drawing paper from Germany, of which the prices are 60 to 80 cents a hundred sheets; and the finest drawing paper, from England, selling at 80 cents to $1 a hundred sheets.

No statistics of paper imports to this district are specially compiled. The imports of the Empire in 1898 are given below.

In several cases, the official statistics which I copy bunch together different kinds of paper—for instance, drawing, carbon, and copper plate.

Imports in 1898.

Kinds of paper.	Quantity.	Value.
	*Met. cwts.**	
Blotting and coarse brown paper	519	$2,739
Pasteboard	12,717	50,262
Wrapping paper, lacquered or glazed	7,519	86,020
Slate, sand, emery, and pumice paper	6,491	79,060
Printing paper	500	6,342
Writing paper	492	5,793
Cigarette, silk, and flower paper	2,174	76,509
Lithographic and ruled paper, for bills, etc	2,700	77,018
Drawing, carbon, copper-plate paper, and parchment	3,653	108,550
Mottled paper	4,803	148,201

*1 metric cwt. = 220.46 pounds.

Imports in 1898—Continued.

Kinds of paper.	Quantity.	Value.
	Met. cwts.	
Albumen and gelatin paper and artists' pasteboard	93	$4,531
Gold and silver paper	564	33,203
Paper with watermarks	1,396	107,687
Cloth-covered paper and pasteboard	148	4,206
Wall paper	4,035	122,866
Writing paper and envelopes to match	262	17,756
Paper toys	943	233,612
Cloth-lined paper book covers	361	13,191
Fancy paper goods, different colors	9,786	2,185,214
Total	59,166	3,362,760

Financial transactions with the countries from which imports come are carried on in the customary way, with drafts and checks.

Germany controls the paper-import business with Austria-Hungary, supplying nearly every pound of some kinds of paper imported. Germany furnished over 50 per cent of every sort of paper imported into this country, excepting only blotting paper in 1896 and cigarette paper in 1897 and 1898.

Other nations rank as follows in paper imports to Austria-Hungary:

1896.	1897.	1898.
Italy.	France.	France.
France.	Italy.	Italy.
Great Britain.	Great Britain.	Great Britain.
Switzerland.	Switzerland.	Switzerland.
Belgium.	United States.	Belgium.
United States.	Sweden.	United States.
Sweden.	Holland.	Sweden.
Holland.	Belgium.	Holland.

In each of these years, the paper imports from the United States amounted to about 500 metric cwts. (110,230 pounds), or 1 per cent of the total quantity of imports. However, in 1898, of 9,322 metric cwts. of cellulose imported, 1,465 came from the United States.

AMERICAN TRADE PROSPECTS.

Other countries flood Austria-Hungary with samples of their paper products, and also send representatives to personally solicit orders. They introduce other products in an equally vigorous way. For instance, a large English machinery firm is represented in Austria-Hungary by a resident special agent, who, for convenience, lives in this city. By observation I have become familiar with his methods and the extent of his operations. He maintains a busy correspondence with industries in all parts of the Empire, and makes frequent personal visits to factories. He is energetic and prepossessing and speaks several languages, and appearances indicate that he receives a large salary or earns handsome commissions. Other British concerns probably have similar methods. At any rate, English machinery is in high favor and much in use in this country.

The United States must adopt equally vigorous and sustained efforts in order to build up its exports to this country. A few American articles sell themselves—lard and bacon, for instance, which are so much cheaper and better than all competitors that they seem above competition. But an article like paper must be personally introduced and vigorously pushed by a special representative, who either should become a resident of the country or visit it very frequently. He must speak the local language—German for this Empire. But he must, first of all, meet his competitors in price; better still, make a lower price, for buyers are slow to break off old connections unless they can save money thereby; and he must give the usual liberal terms.

It can not be said that any openings exist in this district at present for American paper, pulp, and articles manufactured from paper. Such things must be forced, and doubtless can be by an aggressive policy and by competing with the prices of the home producers. The United States can successfully compete in quality of paper; the chief difficulty is to pay freight and duty and then meet the price of the local product.

MAIL AND TELEGRAPHIC FACILITIES.

Mails from the farthest parts of Germany arrive here within twenty-four hours after starting; from England, within forty-eight hours; from other parts of Europe, in from one to three days; and from the different States of the Union, in from ten to fourteen days. Mails from European points arrive daily; from the United States, semiweekly. There is telegraphic connection with all countries with which import business is done.

EXPORTS.

The chief paper exports from this district are writing, printing, wrapping, and cigarette paper. Per 100 kilograms (220.46 pounds), the prices at point of shipment are as follows: Writing, $9 to $20; printing, $5 to $10; wrapping, $4 to $10; cigarette, $20 to $40. These articles go mainly to Germany, France, and England, though large quantities (especially of cigarette paper) go to Egypt and Turkey; but it is impossible to state the quantities to each country.

The following table gives the paper exports from Austria-Hungary in 1898:

Exports in 1898.

Kinds of paper.	Quantity.	Value.
	*Met. cwts.**	
Blotting paper and coarse brown paper	17,090	$90,201
Pasteboard	170,015	661,074
Wrapping paper, lacquered or glazed	116,038	755,443
Slate, sand, emery and pumice paper	1,432	16,279
Printing paper	54,427	375,655
Writing paper	102.950	1,212,133
Cigarette, silk, and flower paper	35,839	822,562
Lithographic and ruled paper, for bills, etc	3,084	60,101
Drawing, carbon, and copper-plate paper and parchment	1,944	63,141
Mottled paper	10,294	167,175
Albumin, gelatin paper, and artists' pasteboard	48	2,339
Gold and silver paper	29	1,119
Paper with watermarks	153	4,348
Cloth-covered paper and pasteboard	139	3,950
Wall paper	200	3,248
Writing paper and envelopes to match	3,742	127,955
Playing cards	1,795	72,877
Paper products not specified	39,661	1,144,288
Total	558,880	5,583,878

*1 metric cwt.=220.46 pounds.

Exports go to all parts of the globe, but the largest are to the following countries, in this order: Germany, Italy, Great Britain, British India, Turkey, Egypt, Servia, Roumania, Greece, Switzerland, and Russia. A small quantity of paper goes to the United States each year, chiefly writing, printing, and cigarette paper—about 2,000 pounds in 1898.

There are no export duties.

SCHEDULE FOR TRANSPORTATION.

On articles used for the manufacture of paper—rags, wood, chemical fibers, etc.—the rate from the most distant domestic points of origin to mills in this consular district, per 100 kilograms (220.46 pounds), is $1; 10,000 kilograms, 60 cents per 100 kilograms. But practically all of such articles used in the district come from near-by points, and mostly from the immediate vicinity of the mills. Some paper-making material is imported from Germany, on which the rate for 100 miles' transportation is 40 cents per 100 kilograms; 10,000 kilograms, 25 cents per 100 kilograms.

Wood pulp is exported to all parts of Europe. The freight rate to a point at an average distance in Germany (150 miles) is 70 cents per 100 kilograms; 10,000 kilograms, 40 cents per 100 kilograms. Time: Fast freight, 2 days; slow freight, 6 days. The rate to France (800 miles) is $2.60 and $1.50, respectively. Time: Fast freight, 5 days; slow freight, 11 days. To Italy (800 miles), $2.40 and $1, respectively. Time: Fast freight, 10 days; slow freight, 20 days. To England (900 miles), $1.60 and $1.10, respectively. Time: Fast freight, 7 days; slow freight, 11 days. To Russia (1,500 miles), $2.30 and $1, respectively. Time: Fast freight, 11 days; slow freight, 28 days. To other European countries, rates and time approximate the foregoing for like distances. Service is daily in every case.

The freight rate on paper by rail is the same for all kinds. To Vienna, per 100 kilograms, the rate is $1; 10,000 kilograms, 59 cents per 100 kilograms. To Prague the rate is 45 cents per 100 kilograms; 10,000 kilograms, 28 cents per 100 kilograms.

On exports of paper to foreign countries, the rates and time to Germany, France, Italy, Great Britain, Russia, and other parts of Europe are essentially the same as those given for exports of wood pulp. To Egypt the rate is $1.60 per 100 kilograms; 10,000 kilograms, $1.42 per 100 kilograms; distance, 1,500 miles; time, 18 days; frequency of service, weekly. To British India, $1.70 and $1.52, respectively; distance, 5,000 miles; time, 50 days; service, biweekly. To South America, $2.07 and $1.90, respectively; distance, 4,500 miles; time, 30 days; service, weekly. To the United States, $1.40 and 92 cents, respectively; distance, 4,000 miles; time, 12 to 14 days; service, triweekly, from various ports. The rate to the United States is two-thirds by railway and one-third by water; to British India and South America the rate is about equally divided between land and water.

The preceding rates of freight, time, and frequency of service apply generally to shipments hither as well as hence. The transportation indicated is all by rail, except to and from Great Britain, Egypt, British India, and America, in which cases it is by regularly scheduled steamers—German ships from Hamburg and Bremen to England and America and Austrian ships from Trieste to Egypt and India.

PROPOSED PAPER TRUST.

For several months, a movement has been on foot, initiated by the paper makers of this district, to unite all the paper factories of the Empire into a trust. It is explained that this is necessary because the factories have lately been operated at a loss. Production and prices must be regulated to remedy this disastrous condition, say those who are interested. It is proposed to organize a joint-stock company with a capital of 50,000,000 florins ($20,000,000). Most of the paper firms, it is said, are favorable to the combination, but at latest advices no final action had been taken.

FRANK W. MAHIN,
Consul.

REICHENBERG, *May 19, 1899.*

PRAGUE.

POPULATION.

The city of Prague, with its suburbs, has 333,000 inhabitants, and the estimated population of this consular district is 3,500,000, of which fully 25 per cent are illiterate, and only those who have technical knowledge of the manufacture of paper or the necessary means to venture upon such undertaking are producers.

CONSUMPTION.

Paper here is principally used for printing, writing, packing, toilet purposes, and for manufacturing cartons. Industries requiring paper are printing offices, the textile branch; glass, porcelain, and metal ware factories; box factories, playing-card factories, etc. Paper made wholly out of rags is used the least here, and the most salable paper at present is that manufactured out of wood pulp alone, of cellulose and tatters, and also of straw.

Only in writing paper is it possible to give sizes and names of qualities, and this only to a limited extent. The following are most commonly known here:

	Centimeters.*
Klein Stempel	34 by 42
Neu Stempel	35 by 43½
Register	41 by 51½
Median	46 by 59
Royal	50 by 66
Super-royal	53 by 69
Imper-royal	55 by 76½

Prices vary from 9 florins ($3.60) per 100 kilograms (220.46 pounds) to 125 florins ($50) per 100 kilograms. The usual terms of sale are four months' credit or 3 per cent discount for cash within thirty days; but very frequently, longer time is given.

It is not possible to find out the quantities and values of any class of paper consumed in this district for each year, no statistics being kept.

There are in Prague about 2,000 printers, but I am unable to ascertain the number in the whole district. In this district, there are no articles manufactured from paper except boxes of various sizes and kinds. The consumption of paper in Bohemia is growing steadily and will increase still further after the law has been passed here abolishing the newspaper and calendar stamp tax and permitting the free sale of newspapers. The paper trade is principally controlled by Austrian citizens.

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*1 centimeter=0.3937 inch.

PRODUCTION.

The fuels used are wood and coal, the price for wood being 6 florins ($2.40) per cubic meter (35.316 cubic feet) and the price for coal being 47 kreutzers (equal to about 18¾ cents) per 100 kilograms (220.46 pounds) at the factory.

The raw materials for the manufacture of paper are wood pulp, cellulose (of pine or straw), and rags; but the available quantities are not ascertainable. There is but one establishment in Bohemia which manufactures paper machinery exclusively, that of M. Nebrich at Smichew; but there are a number of others which manufacture parts of such machinery and do repairing. The wages in paper mills run from 30 kreutzers (12 cents) per day up to 1.60 florins (64 cents) per day, except for the chemist and machinist.

The tendencies in production at present are that the factories, under a general agreement, are reducing their output, and a fall in prices has resulted. It is claimed that the competition from Germany, France, and Sweden, and of late from the United States, has considerably cut into the trade, formerly controlled by the manufacturers here.

IMPORTS AND TRADE FACILITIES.

The import of paper into this district is confined to a small quantity of the very finest writing, blotting, and colored tissue paper. It is impossible to ascertain market prices. This paper is produced principally in Germany, France, and England; but as to the several amounts imported from each country, there are no statistics kept here. The banking facilities and financial connections with the different countries are good.

The mail and telegraphic facilities with each country from which paper is exported to Austria are good.

Some of the German, English, and Swedish manufacturers have established depots and agencies here, and their salesmen visit the city regularly.

It is my belief that in the better class of writing papers our manufacturers could secure quite a trade in this country; but to do so someone conversant with all the branches of paper manufacturing should be sent here to study the situation. There is no question that every obstacle which can be thrown in the way of the American manufacturer will be resorted to to keep him out of this market. The daily newspapers warn people not to give any information about the local industries to anyone, giving as a reason that the American manufacturers are trying to crowd out the home industries. There is no question to my mind, however, that our manufacturers can successfully compete with the Austrians in Germany, India, Australia, the countries of South America and the Orient, to which places paper is principally exported from here.

EXPORTS.

To the countries above named, all classes and kinds of paper are exported, whereas to the United States there is only sent tissue and parchment paper, of which, according to the records at this consulate, the prices are as follows: Tissue paper, from 22¾ cents to 49 cents per ream; parchment paper is 38¾ cents per kilogram (2.2 pounds). The total value of paper exported from here to the United States for the year ended December 31, 1898, was $28,434.81. The shipments are made via either Hamburg, Bremen, Trieste, or London, from which places they go by water. There are six daily trains leaving here for each of the places named.

There are no statistics available as to the quantities and values of the total exports from Prague.

SCHEDULE FOR TRANSPORTATION.

The rates charged by railway companies are as follows:

On paper of all kinds to Hamburg, 4.66 marks ($1.11) per 100 kilograms (220.46 pounds), 3.55 marks (85 cents) per 100 kilograms in lots of 5,000 kilograms (11,023 pounds), and 3.16 marks (75 cents) per 100 kilograms in lots of 10,000 kilograms (22,046 pounds). On wood pulp, dried, containing 40 per cent of water or less, not colored or glued, per 100 kilograms in 5,000-kilogram lots, 3.55 marks (85 cents) and in 10,000-kilogram lots, per 100 kilograms, 2.69 marks (64 cents) to Hamburg; and 3.72 marks (89 cents) per 100 kilograms in 5,000-kilogram lots, and 2.76 marks (66 cents) per 100 kilograms in 10,000-kilogram lots to Bremen.

On wood pulp, wet, the freight to Hamburg is 3.55 marks (85 cents) per 100 kilograms in 5,000-kilogram lots, and 1.74 marks (41 cents) in 10,000-kilogram lots; to Bremen, 3.72 marks (89 cents) per 100 kilograms in 5,000-kilogram lots, and 1.77 marks (42 cents) in 10,000-kilogram lots.

On wood pulp in pressed layers, the freight to Hamburg in 5,000-kilogram lots is 3.55 marks (85 cents) per 100 kilograms, and 3.28 marks (78 cents) in 10,000-kilogram lots; to Bremen, 3.72 marks (89 cents) and 3.44 marks (82 cents) per 100 kilograms, respectively.

On rags, the freight from here to Hamburg is 3.55 marks (85 cents) per 100 kilograms in 5,000-kilogram lots, and 2.69 marks

(64 cents) in 10,000-kilogram lots; to Bremen, in 5,000-kilogram lots, 3.72 marks (89 cents) per 100 kilograms, and in 10,000-kilogram lots 2.76 marks (66 cents).

The foregoing are the only rates ascertainable here; the rates via Trieste and London not being fixed, but subject to special contract.

HUGO DONZELMANN,
PRAGUE, *March 28, 1899.* *Consul.*

TRIESTE.

POPULATION.

The total population of this consular district, comprising the provinces of Carinthia, Carniola, Litorale, and Dalmatia, is, according to the latest census (December 31, 1890), 1,034,631. The present population is estimated at 1,090,000.

In 1890, the percentage of illiterates was 31 for Carinthia, 40 for Carniola, 43 for Litorale, and 80 for Dalmatia.

The people in the northern, but not in the southern, portion of this consular district have mechanical traits.

CONSUMPTION.

Paper is used chiefly for printing, writing, and packing purposes.

Practically the only industrial establishments requiring paper are the playing-card and cigarette-paper factories of G. Finazzer and Saul D. Modiano, both of Trieste.

All classes (binding and packing, tissue and blotting, wall, card and drawing, printing, writing, and cigarette paper) are used to a greater or less extent.

There are no special requirements as to quality, sizes, etc. Paper of every quality, weight, and size is manufactured and used.

The terms of sale are from four months to one year, with 2 to 5 per cent discount for cash.

I have not been able to obtain data as to the quantities and value of paper consumed here.

The exact number of paper firms, companies, and brokers in this consular district can not be ascertained; at any rate, it is not less than thirty. All the Austrian and Hungarian paper companies and many foreign paper firms have representatives at Trieste.

The principal firms in Trieste are:

Rudolf Mangold, Via Campanile 4 (general agent of the Leykam-Josefsthal Paper Company).

Antonio Paduvani, Via Canalpiccolo 1.

V. A. Pfeiffer, Via Forni 11.

F. Rollinger, Via Teatro 2.

Rovigo & Dagiat, Via Postevecchie 14.

L. Smolars, Via Poste 5.

W. Strehler, Piazza della Borsa 3.

The number of newspapers published in this consular district is about 50, only 5 of which are dailies. As to the number of other publications, not one of the different publishers consulted would even venture an estimate. These publications are far from being numerous.

There are probably between 60 and 80 printing establishments in the district of Trieste. No statistical data, and not even a reliable estimate, can be obtained as to the total number of printers.

There are not more than six or eight publishers really worthy of the appellation in the district.

Bookbinders are the only class of users of paper not already mentioned. There are 29 binderies in Trieste, and probably as many more in all the other cities of the district together.

The chief articles manufactured from paper are playing cards and cigarette paper. The amounts can not be ascertained.

The consumption of paper, I think, is likely to increase.

Austria is said to produce more paper than any other country in Europe, and it undoubtedly dominates the paper trade in southeastern Europe and Asia.

PRODUCTION.

In the southern part of this consular district the water power is limited, and probably all that is available has been developed. In the northern and more mountainous portion of the district there is still a great deal of undeveloped power in localities not reached by railroads. There is, probably, from 6,000 to 8,000 developed horsepower.

The principal and almost only fuel is coal. English coal sells at Trieste at from $4.50 to $5.50 and native coal at from $2 to $5 per ton, according to quality.

Wood and rags, especially the latter, are the principal materials used.

The present prices per quintal (220.46 pounds) at Trieste are as follows:

	Florins.	
Colored rags	3=	$1.21
White rags	9 to 15=	$3.65 to 6.09
Wood	6=	2.43
Wood pulp	9 to 12=	3.65 to 4.87

All of the factories in this district have railroad facilities.

As in Austria-Hungary the importation of raw material is free, and as in addition to this an export duty of 4 florins ($1.62) per 100 kilograms is placed on rags, the supply of these materials is practically unlimited.

Paper machinery is manufactured in Austria, especially in Bohemia; but the best machinery is imported from Germany and Switzerland.

The cost of male labor in the mills is from 1.50 to 3 florins (60 cents to $1.21); of female labor, from 50 kreutzers to 1 florin (20 to 40 cents) per day. All labor is reasonably efficient.

I can find no reliable data as to the quantities and values of paper produced annually.

There are 10 paper mills in this consular district, with power and output as follows:

(1) Josefsthal branch of the Leykam-Josefsthal Paper Company (main office at Graz; capital, 6,000,000 florins), at Josefsthal Carniola; has 300 horsepower, water power as well as steam power, and 3 paper machines; manufactures from 7½ to 10 tons of writing paper per day.

(2) Janzia branch of the same company, at Janzia, Carniola; uses also both water and steam power and produces about 3 tons of writing paper per day.

(3) Podgora branch, near Gorizia, has 300-horsepower water power and 3 paper machines; produces daily from 7½ to 10 tons of writing and printing paper.

(4) Gortschach branch, near Laybach, with 150-horsepower water power and paper and cardboard machines; produces from 3 to 3½ tons of printing paper and cardboard daily.

(5) Ratschacher Papier-Fabrik, near Steinbrück, Carniola; power and output are not reported.

(6) Kaltenbrunn branch, near Laybach, with 150-horsepower water power; manufactures pulp, etc., for the company's other branches.

(7) Franz Lambrecht, Grünburg, Carinthia; uses both water and steam power and manufactures writing, printing, and colored paper.

(8) Anton L. Moritsch, Villach, Carinthia, owns three different mills in the province of Carinthia and produces writing and packing paper and pasteboard.

(9) A. Ebner, Poitschbach, Carinthia; employs 90-horsepower water power, one 15-horsepower engine, one paper and two pasteboard machines; produces 900 tons of various kinds of paper per annum.

(10) Eduard Engländer, Rechberg, Carinthia; has 200-horsepower water power and one paper machine, and produces chiefly packing paper.

Practically, all the paper is machine made.

With but few exceptions, the processes are modern. The methods are improving, and the production is likely to increase.

The Leykam-Josefsthal Paper Company operates in this consular district five different pulp mills, with a total water power of about 2,000 horsepower and some twenty machines. There are, besides, a number of smaller pulp mills in the district operated by other concerns.

IMPORTS.

The principal kinds of paper imported are handmade paper from Italy, cigarette paper from France, fancy and colored paper from Germany, and fine writing paper from England.

The following tables will show from which countries the principal classes of paper and paper ware were imported in 1896 (the last year for which official statistics are available):

Articles and whence imported.	Quantity.	Value.	
Wood pulp:			
Bleached (produced by chemical process)—	*Quintals.**	*Florins.*	
Germany	1,025	17,425	$7,075
Norway	408	6,936	2,816
Netherlands	102	1,734	704
United States	96	1,632	663
Unbleached (produced by chemical process)—			
Germany	767	9,204	3,737
Italy	103	1,236	502
Sweden	68	816	331
Produced by mechanical process—			
Germany	275	1,650	670
Great Britain	1	6	2
Russia	1,010	6,060	2,460
Netherlands	103	618	251
Straw pulp, etc.:			
Germany	14,400	252,000	102,312
Great Britain	103	1,803	732
Netherlands	2,111	36,942	14,998
Blotting paper, coarse; packing paper, uncolored:			
Germany	376	4,888	1,985
France	1	13	5
Italy	1,153	14,989	5,086
United States	7	91	37
Common pasteboard:			
Made of wood pulp—			
Germany	1,726	16,397	6,657
Russia	3	29	12
Switzerland	1	9	4
Made of straw—			
Germany	1,198	10,183	4,134
Other—			
Germany	9,557	95,570	38,801
Great Britain	10	100	41
France	1	10	4
Switzerland	3	30	12
Russia	1	10	4

* 1 quintal = 220.46 pounds.

Imports—Continued.

Articles and whence imported.	Quantity.	Value.	
Tar and stone pasteboard:	*Quintals.*	*Florins.*	
Germany	3,122	28,879	$11,725
Great Britain	281	2,599	1,055
Italy	15	139	56
Switzerland	2	18	7
Turkey	1	9	4
Packing paper, smooth or colored:			
Germany	4,563	127,764	51,872
Great Britain	1	28	11
France	2	56	23
Italy	1,469	41,132	16,700
Sweden	167	4,676	1,898
Belgium	27	756	307
Switzerland	83	2,324	944
Turkey	1	28	11
Egypt	3	84	34
United States	57	1,596	648
China	1	28	11
Packing paper, varnished or tarred:			
Germany	125	4,750	1,929
Great Britain	1	38	15
Switzerland	1	38	15
Glazed board, etc.:			
Germany	391	27,370	11,112
Great Britain	71	4,970	2,018
Switzerland	39	2,730	1,108
Italy	3	210	85
Slate paper and polishing paper:			
Germany	5,814	174,420	70,815
Great Britain	139	4,170	1,693
France	41	1,230	499
Italy	1	30	12
Russia	2	60	24
Netherlands	15	450	183
Belgium	4	120	49
Switzerland	2	60	24
Greece	5	150	61
Roumania	3	90	37
United States	120	3,600	1,462
Paper, common (unsized):			
Germany	125	3,313	1,345
France	6	159	65
Italy	20	530	215
Egypt	2	53	22
China	1	27	11
Writing paper:			
Germany	313	10,016	4,066
Great Britain	40	1,280	520
France	14	448	182
Italy	3	96	39
Netherlands	28	896	364
Switzerand	34	1,088	442
Cigarette, tissue, flower paper, etc.:			
Germany	1,351	101,325	41,138
Great Britain	14	1,050	426
France	707	53,025	21,528
Italy	99	7,425	3,015
Switzerland	47	3,525	1,431
Paper not classified:			
Germany	4,967	223,545	90,759
Great Britain	295	13,280	5,392

Imports—Continued.

Articles and whence imported.	Quantity.	Value.	
Paper not classified—Continued.	*Quintals.*	*Florins.*	
France	170	7,685	$3,120
Italy	534	24,040	9,760
Switzerland	158	7,120	2,891
China	1	50	20
Japan	6	300	122
Russia	2	90	37
Sweden	13	585	238
Netherlands	78	3,510	1,425
Belgium	1	45	18
Turkey	22	990	402
United States	28	1,260	512
Lithographed, printed, or lined paper:			
Germany	1,885	131,950	53,572
Great Britain	42	2,940	1,198
France	89	6,230	2,529
Italy	33	2,310	938
Netherlands	1	70	28
Belgium	6	420	171
Switzerland	38	2,660	1,080
Turkey	1	70	28
United States	2	140	56
Drawing paper, parchment, etc.:			
Germany	3,061	214,270	86,994
Great Britain	41	4,920	1,998
France	154	18,480	7,503
Italy	4	360	146
Netherlands	2	180	73
Belgium	655	65,500	26,593
Switzerland	14	1,260	512
United States	4	360	146
Colored paper:			
Germany	3,024	302,400	122,774
Great Britain	4	400	162
France	9	900	365
Italy	4	400	162
Sweden	9	900	365
Belgium	42	4,200	1,705
Japan	1	100	41
Albuminized, painters' paper, cardboard:			
Germany	137	16,440	6,675
France	1	120	49
Italy	1	120	49
Gilt and silvered paper, and paper with gold and silver designs:			
Germany	451	90,200	36,621
Great Britain	1	200	81
France	1	200	81
Sweden	4	800	324
Switzerland	2	400	162
Pressed and perforated paper, strips of the same:			
Germany	938	178,220	72,357
Great Britain	12	2,280	926
France	4	760	309
United States	3	570	231
Paper and pasteboard pasted on linen:			
Germany	151	10,570	4,291
Great Britain	11	770	313
France	2	140	57
Belgium	1	70	28
Switzerland	4	280	114

Imports—Continued.

Articles and whence imported.	Quantity.	Value.	
	Quintals.	*Florins.*	
Wall paper:			
Germany	3,013	225,975	$91,746
Great Britain	123	9,225	3,745
France	282	21,150	8,587
Italy	5	375	152
Netherlands	11	825	335
Belgium	16	1,200	407
Switzerland	28	2,100	853
Moldings of paper pulp, asphalt, or similar material:			
Germany	805	56,628	22,991
Great Britain	1	63	26
France	53	3,987	1,619
Italy	3	316	128
Sweden	1	63	26
Switzerland	12	756	307
Envelopes and letter paper:			
Germany	43	3,655	1,484
Great Britain	10	850	345
France	13	1,105	449
Italy	4	340	138
Switzerland	1	85	35
Cigarette paper in books:			
Germany	30	4,950	2,010
France	245	38,640	15,688
Spain	4	520	211
Switzerland	14	2,800	1,137
Fancy paper ware, fine boxes, labels, vignettes, etc.:			
Germany	5,817	2,944,650	1,195,528
Great Britain	156	58,800	23,873
France	196	64,150	26,045
Italy	65	27,200	11,043
Netherlands	20	10,550	4,283
Belgium	19	10,000	4,060
Switzerland	88	34,000	13,804
Greece	18	5,400	2,192
Turkey	6	600	244
Spain	1	550	223
Russia	2	1,100	447
Bulgaria	1	550	223
Japan	74	40,800	16,565
China	1	550	223
Africa	1	550	223
United States	33	18,550	7,531
Other paper ware not specially mentioned, paper hat lining, etc.:			
Germany	5,709	396,630	161,032
Great Britain	373	26,110	10,601
France	377	26,390	10,714
Italy	101	7,070	2,870
Russia	13	910	369
Netherlands	40	2,800	1,137
Belgium	45	3,150	1,279
Switzerland	290	20,300	8,242
Turkey	2	140	57
United States	57	3,990	1,620
Japan	1	70	28
Paper toys:			
Germany	821	492,600	199,996
Great Britain	10	6,000	2,436
France	7	4,200	1,705
Italy	1	600	244
Japan	1	600	244

Imports—Continued.

Articles and whence imported.	Quantity.	Value.	
	Quintals.	*Florins.*	
Book covers, covered with linen:			
Germany	401	36,090	$14,653
Great Britain	1	90	37
France	1	90	37
Italy	1	90	37
Russia	1	90	37
Servia	5	450	183

The banking facilities with England, Germany, France, and Italy—which countries furnish more than 97 per cent of all imported paper—are good.

IMPORT DUTIES.

The import duties of Austria-Hungary on paper and paper ware are as follows:

Articles.	Duty per 100 kilograms.			
	General tariff.		Lowered by special treaties.	
	Florins.		*Florins.*	
Common blotting paper; coarse packing paper, uncolored	3.00	$1.22	1.50	$0.609
Tar and stone pasteboard, straw pasteboard	3.00	1.22	1.00	.406
Ordinary pasteboard, except the above mentioned	3.00	1.22	.50	.203
Packing paper, smooth or colored, varnished or tarred	3.00	1.22	1.50	.609
Paper, common, unsized (coarse, gray, half white, and colored), all unsized printing paper	5.00	2.03	3.00	1.22
Paper not otherwise provided for	5.00	2.03	3.00	1.22
Lithographed, printed, or lined paper for labels, bills, bills of lading, etc.; drawing paper, gelatin paper, parchment paper, printers' pasteboard, many-colored paper	7.00	2.84	5.00	2.03
Wall paper	25.00	10.15	18.00	7.31
Gilt and silvered paper with gold and silver designs (genuine or imitation, also bronzed), pressed or perforated paper, strips of same, paper and pasteboard lined with cotton	15.00	6.09	10.00	4.06
Moldings of paper pulp, asphalt, or similar material, neither painted nor varnished; also in connection with wood or iron	5.00	2.03	2.00	.812
Paper ware, *i. e.*, made out of paper pulp or wood fiber; also in connection with other material, if not coming under tariff No. 195 or within the class of india rubber, leather, metal, and fancy goods; hat lining, also spun over with textile goods	15.00	6.09	12.00	4.87
Fancy paper ware, fine boxes, labels, and vignettes in different colors (chromo-lithographs), paper collars and cuffs; paper covers, linen or cotton lined; also in connection with other material if not within the class of leather and fancy goods	30.00	12.18	18.00	7.31

Both the mail and telegraphic facilities with the countries mentioned above are good. Mail from Trieste reaches Rome in one, Paris and Berlin in one and one-half, and London in two days.

AMERICAN TRADE PROSPECTS.

Germany furnishes more than 90 per cent of all the paper imported into Austria-Hungary; France furnishes 3½ per cent; Great Britain, 2 per cent; and Italy, 1.8 per cent.

Germany is practically the only country which is making a determined effort to build up its trade in this district. If hotel registers can be relied upon, a majority of all the commercial travelers who come to Trieste hail from Germany. These men speak the language of the native merchant, carry with them a large assortment of samples, and are prepared to give prompt and exact information as to prices and terms of payment. Before proceeding to do business, they are careful to inform themselves as to the needs of the place and the prices and terms of payment offered by their competitors. They are always ready to meet all the emergencies of trade, and do not often fail to book orders. I do not think that any special effort is being made by Germany or any other country to build up its exports of paper to this consular district.

There is, in my opinion, no opening for American paper as far as the lower grades are concerned. Both material and labor are cheap, and common paper can probably be manufactured here as cheaply as anywhere in the world. As regards fine linen paper, however, I have seen nothing in Austria that could compare with our product. The grade of paper used here in business and official correspondence is fully 50 per cent below the grade employed in America for similar purposes. It is said that this is due to considerations of economy. This may be true, but I am rather inclined to believe that the Austrian merchant uses inferior paper because he has never been offered any other. While "fancy" paper is on the market, its sale is never pushed. It may require a good deal of missionary work to bring about a change, but I believe the Austrian merchant can be taught in time that good stationery advertises his business as well as a good "ad." or a good show window; and when that time comes, America will, I believe, supply the paper. To hasten its coming, our manufacturers of fine paper should have their goods exhibited in the Austrian market by American salesmen, who should, however, be familiar with the customs and languages of the country. Letters and circulars in a foreign language receive but little attention. They are the most wasteful means of advertising goods abroad. It should also be borne in mind that the Austrian is accustomed to more liberal terms of payment than the American manufacturer or exporter is, as a rule, willing to give. Credit is frequently given by native manufacturers for six, nine, and even twelve months, and many dealers will not buy on any other terms.

EXPORTS.

All classes of paper are exported, but common writing and packing paper are the leading grades.

The following table will show to which countries the principal classes of paper and paper ware were exported in 1896:

Articles and whither exported.	Quantity.	Value.	
Wood pulp:			
Bleached (produced by chemical process)—	*Quintals.**	*Florins.*	
Germany	16,587	281,979	$114,483
Great Britain	13,343	226,831	92,093
France	67,136	1,141,312	463,373
Italy	29,188	496,196	203,456
Russia	20,318	345,406	140,235
Switzerland	4,401	74,817	30,376
Spain	1,145	19,465	7,903
Roumania	6,078	103,326	41,950
United States	600	10,200	4,141
Other countries	1,808	30,736	12,479
Unbleached (produced by chemical process)—			
Germany	106,052	1,272,624	516,685
France	16,932	203,184	82,493
Italy	58,957	707,484	287,239
Russia	5,662	67,944	27,585
Belgium	16,835	202,020	82,020
Switzerland	1,352	16,224	6,587
Roumania	2,361	28,332	11,503
Other countries	1,832	21,984	8,926
Produced by mechanical process—			
Germany	5,836	35,016	14,216
Italy	18,147	108,882	44,206
Russia	20,236	121,416	49,295
Switzerland	1,720	10,320	4,190
Other countries	709	4,254	1,727
Blotting paper, coarse; packing paper, uncolored:			
Germany	1,554	20,202	8,202
Turkey	4,397	57,161	23,207
Bulgaria	1,183	15,379	6,244
Servia	1,041	13,533	5,494
Egypt	1,558	20,254	8,223
Other countries	1,507	19,591	7,954
Common pasteboard, made of wood pulp:			
Germany	25,355	240,873	97,794
Great Britain	12,319	117,030	47,514
Italy	51,561	489,829	198,871
Russia	2,828	26,866	10,908
Switzerland	8,175	77,663	31,531
Spain	8,738	83,011	33,702
Greece	1,901	18,059	7,332
Turkey	15,276	145,122	58,919
Bulgaria	2,025	19,238	7,811
Egypt	5,185	49,258	19,999
Other countries	3,189	30,295	12,300
Other common pasteboard, tar and stone pasteboard:			
Germany	10,611	106,110	43,081
Russia	3,810	38,100	15,469
Greece	1,496	14,960	6,074
Egypt	1,138	11,380	4,620
Other countries	3,328	33,280	13,512

*1 quintal=220.46 pounds.

Exports—Continued.

Articles and whither exported.	Quantity.	Value.	
	Quintals.	*Florins.*	
Packing paper, smooth or colored:			
Germany	16,542	261,792	$106,288
Great Britain	3,690	59,040	23,970
Greece	3,320	53,120	21,566
Turkey	15,858	253,728	103,014
Bulgaria	1,508	24,128	9,796
Roumania	1,461	23,376	9,491
Servia	2,116	33.856	13,756
British India	28,632	458,112	185,993
Egypt	20,014	320,224	130,011
Brazil	1,368	21,888	8,887
United States	132	6,112	2,481
Other countries	4,195	67,120	27,251
Packing paper, varnished or tarred:			
Germany	239	5,736	2,329
Other countries	77	1,848	750
Slate paper and polishing paper:			
Italy	649	18,172	7,378
Other countries	265	7,420	3,013
Writing paper:			
Germany	7,576	227,280	92,276
Great Britain	9,103	273,090	110,875
Italy	1,019	30.570	12,411
Netherlands	4,633	138,990	56,428
Belgium	3,779	113,370	46,028
Switzerland	2,300	69,000	28,014
Greece	3.163	94,890	38,525
Turkey	20,849	625,470	253,941
Bulgaria	5,177	155,310	63,056
Roumania	5,258	157,740	64,042
Servia	2,032	60,960	24,750
British India	7,122	213,660	86,746
Egypt	4,659	139,770	56,747
United States	247	7,410	3,008
Brazil	2,806	84,180	34,177
Other countries	3,917	117,510	47,709
Cigarette, tissue, flower paper, etc.:			
Germany	11,823	650,265	264,008
Belgium	1,085	59.675	24,218
Turkey	2,511	138,105	56,071
Other countries	2,950	292,255	118,656
Lithographed, printed, or lined paper:			
Germany	1,114	53,472	21,710
United States	363	17,424	7,074
Brazil	1,231	59,088	23,990
Other countries	1,330	63,840	25,919
Drawing paper, parchment, etc.:			
Germany	1,990	89,550	36,357
United States	120	5,400	2,192
Other countries	924	41,580	20,941
Colored paper:			
Germany	646	41,990	17,048
Turkey	2,699	175,435	71,227
British India	922	59,930	24,332
Other countries	1,734	112,710	45,760
Wall paper·			
Germany	69	2,760	1,121
Other countries	205	8,200	3,329
Cigarette paper in books:			
Germany	252	14,430	5,859
Turkey	3,021	199,905	81,161

Exports—Continued.

Articles and whither exported.	Quantity.	Value.	
	Quintals.	*Florins.*	
Cigarette paper in books—Continued.			
British India	8,232	457,830	$185,879
Egypt	1,986	114,840	46,625
Other countries	2,764	166,420	67,567
Envelopes and letter paper:			
Germany	1,342	115,980	47,088
Other countries	1,055	97,635	39,640
Paper, common (unsized):			
Germany	4,966	86,904	35,283
Great Britain	1,182	20,685	8,398
Greece	3,071	53,743	21,820
Turkey	8,088	141,540	57,465
Bulgaria	7,771	131,992	53,589
Roumania	3,766	65,905	26,757
Servia	7,030	123,025	49,948
British India	8,651	151,392	61,465
Egypt	7,194	125,895	51,113
Brazil	1,325	23,187	9,414
Other countries	3,370	58,978	23,945
Paper not classified:			
Germany	4,305	150,675	61,174
Great Britain	1,678	58,730	23,844
Greece	1,149	40,215	16,327
Turkey	2,523	88,305	35,852
Bulgaria	1,688	59,080	23,986
Roumania	2,106	73,710	29,926
British India	5,513	192,955	78,340
Egypt	1,216	42,560	17,279
United States	269	9,415	3,822
Other countries	10,174	356,090	144,573
Albuminized, painters' paper, cardboard:			
Germany	12	1,440	585
Other countries	56	6,720	2,728
Gilt and silvered paper and paper with gold and silver designs:			
Germany	4	600	244
Other countries	8	1,200	488
Paper and pasteboard pasted on linen:			
Germany	33	2,310	938
Other countries	123	8,610	3,496
Moldings of paper pulp, asphalt, or similar material:			
Germany	16	1,120	455
Other countries	22	1,540	625
Paper ware:			
Germany	6,775	771,612	313,274
Bulgaria	1,085	80,724	32,774
Servia	994	71,164	28,893
Egypt	1,596	196,388	79,734
Turkey	1,340	217,392	88,261
British India	1,486	249,376	101,247
Other countries	3,340	413,340	167,816

The banking facilities with Germany, Italy, France, and Great Britain are good, and those with Turkey, British India, and Egypt fair.

There are no export duties on paper or paper ware. Rags, however, pay an export duty of 4 florins gold ($1.62) per 100 kilograms (220.46 pounds).

The telegraphic facilities with all the principal countries to which paper is exported are good.

Mention has already been made of the mail facilities with Germany, Italy, France, and Great Britain. As regards Turkey, there is a daily mail to Constantinople; time required, two days. There is also a weekly direct and a biweekly or triweekly indirect mail to Egypt; time required, from three to five days. The mail service with British India is less satisfactory. The steamers of the Austrian Lloyd sail twice a month and require about twenty-four days to make the journey to Bombay. By the Brindisi route, letters go weekly and reach Bombay in nineteen days. This route also serves China and Japan.

GENERAL.

The paper industry of Austria seems to prosper. The output of the Leykam-Josefsthal Paper Company alone was 18,187 metric tons in 1897, representing a value of 6,328,250 florins ($2,569,669). While this is the strongest company in Austria, it is only one of many. The total production of paper is certainly increasing. Austria's undoubted success in this particular industry is, in my opinion, due to cheap power, cheap labor, and the export duty on rags. This country at present dominates the paper trade in Turkey and other countries of the East.

SCHEDULE FOR TRANSPORTATION.

(1) The principal mills in this consular district are those in the vicinity of Gorizia and Laibach. The following table gives the rates for carload lots (10,000 kilograms=22,406 pounds) on wood for pulp, cellulose, rags, and vegetable fibers. Rates for smaller quantities are about one-third higher. I am told, however, that these articles are never shipped to the mills mentioned in less than carload lots.

Rates per ton of 2,204.6 pounds (in carload lots).

Articles.	Trieste to Gorizia.		Trieste to Laibach.	
	Florins.		*Florins.*	
Wood for pulp	1.95	$0.791	3.25	$1.319
Cellulose	1.95	.791	3.25	1.319
Rags	2.15	.872	3.70	1.502
Vegetable fibers	1.95	.791	3.25	1.319
Paper	2.60	1.055	4.80	1.948

The mode of transportation is all rail.

(2) All grades of paper pay the same freight, which is for carload lots 2.60 florins from Gorizia and 4.80 florins from Laibach to Trieste, per ton of 1,000 kilograms (2,204.6 pounds). Rates for less

than carload lots (22,406 pounds) average 40 per cent higher. Rates from Trieste to the principal inland markets are as follows, per 100 kilograms:

To—	10,000 kilograms and over.		5,000 kilograms and over.		Less than 5,000 kilograms.	
	Florins.		*Florins.*		*Florins.*	
Vienna	1.30	$0.527	1.66	$0.673	1.89	$0.767
Prague	1.64	.665	2.15	.872	2.99	1.213
Budapest	1.44	.584	1.44	.584	1.67	.678
Graz	1.30	.527	1.34	.544	1.64	.665
Linz	1.47	.596	1.63	.659	2.00	.812
Salzburg	1.61	.653	1.61	.653	2.48	1.006

The mode of transportation is all rail.

(3) At present, rags are practically the only raw material used in the manufacture of paper that Austria imports. In former years some wood pulp was imported, but since 1896 the imports of this article have amounted in value to only $12,000 or $15,000 a year. Nearly all the rags imported by Austria-Hungary come from Germany. The freight from Hamburg to Trieste is usually 15s. ($3.65), and from Bremen 17½s. ($4.26) per ton (2,204.6 pounds). No through rates from the ports mentioned to the mills in this district are quoted.

The goods are consigned to forwarding agents at Trieste, who attend to their transfer.

The transfer charges range from 12 to 20 kreutzers (5 to 8 cents) per 100 kilograms. The rates from this port to the mills have already been given.

(4) The freight rates on paper (without distinction) are as follows:

To Trieste from—		Per 1,000 kilograms.	
Hamburg	marks	22½	$5.36
Bremen	do	25	5.95
Liverpool	shillings	20 to 40	$7.30 to 9.73
Rotterdam	do	25	6.08
Marseilles	francs	25	4.83

The transportation is wholly by water. The carrying trade can not be said to be controlled by any one nation. Great Britain, Germany, and Austria share in it about evenly.

(5) Owing to the fact that Austria-Hungary has placed an export duty of 4 florins ($1.63) per 100 kilograms (220.46 pounds) on rags, the exports of this article are almost nil. Wood pulp is exported to France, Germany, and Italy.

The water rates on wood pulp from Trieste to the various Italian, French, and German ports are as follows:

Per 100 kilograms (220.46 pounds): To Ancona, 1 franc (19.3 cents); to Naples, 2.50 francs (47 cents); to Genoa, 2.50 francs (47 cents); to Marseilles, 3 francs (58 cents).

Per 1,000 kilograms (2,244.6 pounds): To Hamburg, 15s. ($3.65); to Bremen, 17½s. ($4.26).

Special rates are often obtained for large shipments to Italian ports.

(6) The following table gives the rates on paper (without distinction) for the various ports to which this commodity is exported:

From Trieste to—	In bales.	In boxes.
Brindisi and Corfu	50 kreutzers (20.3 cents) per 100 kilograms.	75 kreutzers (30.4 cents) per 100 kilograms.
Antivari, Patras, Athens, Constantinople, and Salonica.	80 kreutzers (32.4 cents) per 100 kilograms.	1.20 florins (48.7 cents) per 100 kilograms.
Alexandria and Smyrna	90 kreutzers (36.5 cents) per 100 kilograms.	1.35 florins (54.8 cents) per 100 kilograms.
Batum, Beirut, Yafa, Odessa, and Tripoli	1.20 florins (48.7 cents) per 100 kilograms.	1.80 florins (73 cents) per 100 kilograms.
Ancona	50 centimes (9.6 cents) per 100 kilograms.	1 franc (19.3 cents) per 100 kilograms.
Naples and Genoa	1.70 francs (32.8 cents) per 100 kilograms.	2.50 francs (47 cents) per 100 kilograms.
Marseilles, Algiers, Tunis, and Tripoli	2.50 francs (47 cents) per 100 kilograms.	3 francs (58 cents) per 100 kilograms.
Hamburg	22½s. ($5.47) per 1,000 kilograms.	
Bremen and Rotterdam	25s. ($6.08) per 1,000 kilograms.	
Liverpool	30s. ($7.30) per 1,000 kilograms.	

As a rule, all Mediterranean ports are reached in from two to seven days; Hamburg, Bremen, and Liverpool, in from nine to twelve days; India, in twenty days; and China and Japan, in from twenty-five to thirty days.

FREDK. W. HOSSFELD,
Consul.

TRIESTE, *April 13, 1899.*

BELGIUM.

ANTWERP.

POPULATION.

According to the last census (December 31, 1895), the total population of Belgium was 6,410,783, and the increase each decade since 1866 has been about 10 per cent.

In my consular district (Province of Antwerp) the population at that date was 769,634, dwelling in one hundred and fifty-two communities. The percentage of illiterates amounts to 37.63.

The Belgians are exceptionally industrious, and Belgium is crowded with manufactures of all kinds. The Belgian people have great mechanical aptitude and furnish engineers of skill and many clever inventors. The great number of paper mills in operation in the country in proportion to its size shows that the paper industry is very prosperous and that the activity of the manufacturer in that direction is great.

CONSUMPTION.

In Belgium, paper is used for every purpose for which it can be employed, principally as follows: Printing of newspapers, circulars, books, advertisements, posters, chromolithography; for the manufacture of fancy-colored paper boxes, playing cards, wall paper, match boxes, packing cases, bags, etc.

There are no industries peculiar to this country requiring the special use of any sort of paper.

As to kinds of paper in use, it may be stated that almost every kind known anywhere is employed, as, for instance, ordinary paper for newspapers, fine and ordinary paper for printing purposes, paper colored in the pulp for the purposes of printing "affiches," paper made of rags, the thin variety used in the manufacture of letter copy books, paper employed in the manufacture of colored paper, colored paper used in the manufacture of record books, in the manufacture of cardboard and for binding purposes, wall paper, paper for the manufacture of spinning bobes, straw paper for packing purposes, candle boxes and playing cards, gray paper, one-fourth-white paper, half-white paper, colored, celluloid, tar paper used for packing purposes and the manufacture of bags, fine colored paper for the packing of woolen goods, parchment paper for the covering of margarin and preserves (this paper is also used in the combed-wool factories).

There exist no special requirements as to weight. The qualities required differ widely according to its destined use. For instance, paper designed for lithographic purposes must be pasted uniformly; writing and packing paper must have great strength.

It is thus almost impossible to state any definite rule as to such requirements, but it may be useful to consult the principal requirements demanded by the largest consumer in Belgium—the Government itself.

Every year the Belgian Government opens a public competition for the paper necessary to its different departments for the ensuing year and furnishes complete specifications for bids. Foreign competitors are admitted. Last year, the competition was for sixteen lots of printing paper of sizes ranging from 42 by 31 inches to 22 by 17 inches, of writing paper 18 by 14 inches to 16 by 12 inches, of packing paper 30 by 24 inches, and of half white for envelopes 30 by 24 inches, to be ordered by the Government in reams of 500 sheets each.

The following table will show the requirements as to weight, strength, and the ash product of each class and style of paper:

Class.	Style.	Weight.		Average strength by 2.2046 pounds.	Ash contents (maximum).
		1 square meter.*	500 square meters.		
		Grams.†	*Kilos.*‡		*Per cent.*
B	I	160	80	32	15
	II	140	70	28	
	III	110	55	22	
	IV	94	47	18.8	
	V	80	40	16	
C	I	56	28	9.8	20
D	II	88	44	13.64	20
	III	76	38	12.16	20
	IV	58	29	8.7	25
	V	60	30	8.1	30
Half white	I	172	86	21.5	20
	II	122	61	24.4	20
	III	106	53	13.25	25
	IV	68	34	11.56	30
Tar paper	I	214	107	26.75	15
	II	118	59	16.52	15

* 1 square meter = 10.76 square feet.
† 1 gram = 15.432 grains.
‡ 1 kilogram = 2.2046 pounds.

As to the requirements for quality and strength, the following is quoted from the specifications:

> The resistance to tearing is established by the formula $l = \frac{p}{mb} \times 1{,}000$
> l = the length of the paper.
> p = charge necessary to rupture of the band, expressed in grams.
> m = weight of paper by square meter, expressed in grams.
> b = width of the band, expressed in millimeters.

The trials are made upon bands of 50 millimeters width, taken as well from the wide portion as from the long portion of the sheets submitted to trial. The charge (p) is average figure of the results obtained.

The paper furnished must conform in all respects to the requirements hereinafter indicated.

The same must be free of folds, of stains, of inequalities of surface, etc., perfectly pasted and perfectly dry before delivery. It must be finished with care and to the same extent on both sides of the sheet. Each ream should weigh the minimum expressed in the specifications. The sheets must have exactly the dimensions prescribed by the specifications and must be cut perfectly square.

Printing paper, writing paper, envelopes, and bands of address must be satined on both sides and resist penetration of every sort of ink.

The terms of sale in Belgium involve credit of thirty to sixty or ninety days. Settlement of account at thirty days' time ordinarily carries a discount varying from 1 to 3 per cent. A discount of from 3 to 5 per cent is generally made for spot cash.

The Minister of Labor and Industry states that there are in this country thirty-three paper firms of companies, comprising manufacturers of pasteboard, occasionally producing paper.

The principal ones are as follows:

Godin & Cie., at Huy (Province of Liege), working thirteen machines rather of small size, producing all kinds of paper, but mostly fine writing paper.

De Naeyer & Cie., whose works are at three different places, to wit: At Willebroeck (Province of Antwerp), where seven large machines are in operation, producing daily 40,000 kilograms (88,184 pounds) of paper of all kinds; at Crainhem (Province of Brabant), where four machines produce vegetable paper exclusively; at Grammont (Province of East Flanders), for the making of colored and one-fourth-white paper.

Société Anonyme des Papeteries de Sarenthum, at Sarenthum (Brabant); printing and colored paper.

Société Anonyme des Papeteries de Virginal, at Virginal (Brabant); all kinds.

Société Anonyme de l'Union des Papeteries, having works at La Hulpe and at Rhode St. Genese—both in Brabant; and at St. Servais-lez-Namur (Province of Namur); all kinds of paper.

Société Anonyme des Papeteries de Gastuche, at Warre (Brabant); all kinds of paper.

Société Anonyme des Papeteries de Limal, at Limal (Brabant); all kinds of paper.

G. Stevens, at Droogenbosch (Brabant); all kinds of paper.

G. Demeurs & fils, at Huyssingen (Brabant); all kinds of paper.

Société Anonyme des Papeteries d'Ittre, at Ittre (Brabant); pasteboard and packing paper.

In my consular district, there are 54 publications of different kinds, to wit: Nineteen daily and weekly newspapers, 9 literary and scientific, 7 periodicals, 2 medical, 3 law journals, 6 theatrical, 1 maritime, 1 sporting, 2 papers for advertising purposes, 3 financial, and 2 industrial.

The following is a list of the principal printers in Belgium. The names marked with an asterisk (*) refer to printers who are at the same time publishers.

At Brussels.

Agence Rossel, 44 rue de la Madeline.*
Alliance Typographique, 49 rue aux Choux.*
G. Balat, 57 rue Potagère.*
J. B. Balencourt, 189 rue Blores.
T. Baertsoen Vve., 5 Grand place.*
V. Beauvis, 1 rue Impériale.
Becqnort-Arien, 31 rue Van Arteveldt.*
A. Becqnort, 205 rue Royal Ste. Marie.
Berghmanns-Van Camvalert, 12 Marché aux Porcs.
Berguemann, 42 rue des Chartrine.*
A. Bertinchamps, 49 rue St. Ghisloin.
V. Bodson, 40 rue Sans Souci.
L. Bourlard, 22 rue d'Assaut.*
Vve. Brismée, 7 rue de la Prévote.*
E. Bruylant, 67 rue de la Régence.*
Bulens, 22 rue de l'Escalier.
Ed. Busath, 61 avenue du Midi.
H. Cador, 14 rue de l'hotel de Ville.*
L. Capelle, 2 rue du Chêne.*
H. Cartulle, 16 rue des Prairiers.
A. Centerick, 17 rue Moretus.
Chany-Cools, 30 rue du Conseil.
Claessens-Nisot, 42 rue Joseph Clares.*
H. Clément, 32 rue du Miroir.
Cools frères, la rue du Poinçon.*
J. J. Coosemans & Janius Vve., 8 rue Bodenbroeck.*
Germon J. Corric, 28 Marché du Parc.
J. Crols-Pirmez, 106 rue de Flandre.
Darem-Van Horebeke, 19 rue de Parchemin.*
De Backer, 29–31 rue de la Croix de Fer.
L. Delcorde, 19 rue Froissard.
A. de Conninck, 16 rue du Forêt.
Al. de Coster, 32 rue Comunisel.
Gero de Hou, 16 rue du Boulet.
Comptoir genervie d'édition, 19 rue des Halles.

At Brussels—Continued.

Deckenne & Cie., Messageries de la Presse, 20 rue du Persil.*
Pierre de Sadelier, 33–39 rue Deschampheller.
G. de Konninck, 16 rue du Fort.
Isid de Nief, 11 rue Charles VI.
G. de Prez, 107 Chaussé de Haecht.
I. de Schuytener, 38 rue de Trèves.
J. H. Descincot, 21 rue du Presbytère-molenbeck St. Jean.
De Nerver-Weenive, 44 rue du Midi.*
Hre. Dier, 13 rue de l'Eparique.*
B. Dirix, 288 Chaussé de Mous.
F. Duck, 1 rue des Chanteurs.
Stanislas Feroy, 15 rue van Moer.
J. Fischlin, 3 rue des Cendres.
J. Geets, 27 rue du Théatre.
E. Geoffroy, 64 boulevard Anspach.*
J. Gerrebos, 41 rue du Pont neuf.
V. Ghys, 85 rue de Flandre.
J. Goernviere, 21 rue de la Limite.*
J. E. Goosens, 31–39 rue du Houblon.*
Gossé & Cie., 3 rue des Hirondelles.
Gomvelos, jr. and sr., 46 rue Broopriez.
R. Grensi, 90 rue de Colvigne.
Guyot frères, 12 rue Pachéio.
Haversmans, 24–30 Gallerie du Commerce.*
F. Hayez, 112 rue de Louvain.*
Edm. Hibertz, 88 Marché au Charbon.
Th. Hoterman, 134–136 boulevard du Nord.
Imprimerie Belga (Cie.), 15 rue Henri Maus.*
Imprimerie des Teavaux publics, 12a rue des Trois Têtes.*
Imprimerie de la Côte Libre, 33 Quai au bois, à brûler.*
Imprimerie Hélios, 53 rue de la Régence.
Imprimerie Générale, 131 Chaussé d'Ixelles.*

At Brussels—Continued.

Imprimerie Populaire, 36 rue de longue Vie.
Jorez, Roelants A., 87 rue Joseph Clares.
Jourdain & Campy, 2-4 Passage des Princes.
H. Knoff, 20 rue des Chartreux.
B. Knoetig, 62 Rempart des Moines.
H. Kremer, 37 place de la Reine.
A. Kuborn, 28-30 rue de Hollande.
Institut National de Géographie, 18, 20, 22 rue des Paroissens.*
Lyon-Chressen Ed., 8 rue Berchmans.*
Ve. Larcier, 22 rue des Minimes.*
L. G. Laurent, 43 rue de l'Hôpital.*
J. Lebèique & Cie., 46 rue de la Madeleine.*
E. Lecomte, 165 rue Belliard.
H. Lecomte, 101 rue Linnée.
A. Lefèvre, 9 rue St. Pierre.*
G. Lejeune, 87 rue van Artevelde.
Alph. Lemoine, 20 boulevard Barthélemy.
J. Lepère, 52 rue Fossé aux Loups.
A. Lesique, 23 rue de la Charité.*
F. Levêque, 147 Chaussé de Wavre.
A. Levêque-Walrawens, 55 rue de la Commune.
M. Levêque, 60 Chaussé de Haecht.
A. Leys, 5 rue de Loxum.
A. Logé, 32 rue de l'Ensignment.
T. Lombaerts, 7 Montagne des Aveugles.
A. Louant, 167 rue de la Victoire.
C. Macintosh, 37 rue St. Josse.
J. Malherbe & frères, 18 rue des Palais.
L. Marchal, 158a boulevard du Hainault.
G. Marci, 51 rue de la Senne.
Dugrooz Martens, 22 rue Marie Christine.
Masure Busart (Mme. G), 47 rue des Alixiens.*
F. Martthyssens, 327 Chaussé d'Anvers.
Ad. Martens, 14 rue d'Or.*
H. Mommems, 195 rue Royale.
Monnom Vve., 32 rue de l'Industrie.*
A. Moreau, 23 rue du Pont Neuf.
L. Narcisse, 2 rue du Presbytère (Ixelles).
H. Neifs, 24 rue Ruysbroeck.
G. Nys, 3 rue de l'Ecuyer.
C. L. Poelman, 28 rue Fonsuy.
M. Parent & Cie., 36 rue Berckmans.
Parys, 38 rue de Laeken.
Peeters, 16 rue d'Accolay.

At Brussels—Continued.

Pollennis & Centerick, 37 rue des Ursulinnes.
J. Pyls, 115-117 rue du Midi.
T. Rein, 64 rue Ruysbroeck.
E. M. & F. Ramlot, 17 rue Grétry.*
Société Belge de Librairie, Oscar Schepens, director, 16 rue Treurenberg.*
E. Robette, 92 rue Blaes.
A. Roeges, 96 rue de la Limote.
Roulman & Bisson, 78 rue Coenraets.
B. Schaumans, 74 rue de Thy.
A. Schneider, 67 rue des Eperonniers.
Segaert, G. & Wolff E., 67 rue du Progrés.
Serès-Crabbe Vve., 2 rue du Houblon.
C. L. Sips-catoir, 3 avenue Louise.
J. Soemer, 4 rue Rempart des Moines.
B. Stevenlinck & Martens, 31 rue de la Pacification.
Stevens, 137 Chaussée de Waterloo.*
J. Strickaert-Deschamps, 179 rue de Flandre.
E. Strickaert, 25 rue van Dermaclin.
F. S. Terneu, 127 rue de Flandre.
H. Toint-Sichier, 11 rue de la Commune.
H. Tordeur, 16 rue Marie Christine.
J. Trefois, 50 rue Gray.
H. Tronet, 128 Chaussée de Wavre.
Van Assche, 29 rue de l'Eglises.*
Van Buggenhoudt frs., 42 rue d'Isabelle.
Van Campenhout, frs. & sr., 13 rue la Colline.*
A. Vandamme, 21 rue Rempart des Moines.
F. Vandenacker, 4 rue des Sablons.*
G. Vandenacker-Baumel, 98 rue Terre Neuve.
Vandenberg & Annps., 24 rue Tetê de Mouton.
F. van den Eide, 57 rue Mommaerts.*
L. van den Houten, 236 rue de Brabant.
Van den Houten Vve., 184 rue Rogier.
Jules Vanderamvera, 16 rue des Sables.*
Charles Vanderanvera, 42 rue de la Rivière.
Van der Linden frères, 1b rue de Cyprés.
Van der Veken Vve., E., 43 rue de la Grande Ile.
C. van de Wegke, 12 Veille Halle au Blé.
D. van Doorslaer, 102 rue des Palais.*
V. Vandoorslaer, 66 rue Sentin.*
G. van Droegenbroeck, 34 Terre Neuve.

At Brussels—Continued.

Van Eeckhondt-Segers, 11 rue de Anggleterre.
Van Crompel-Douz, 8 rue des Grands Carmes.
A. van Mierenhouth, 71 rue St. Bernard.
B. van Mulders, 13 rue des Sables.
V. van Vinckeroy, 28 rue des Rentiers.*
Veriger Léopold, 59 rue des Marrons.
Vertenuil (V.), 204 rue Verte.*
B. Visité, 14 avenue des Eperons d'Or.
L. Vogels, 38 rue Verte.*
D. Voglet, 18 rue des Sables.*
A. Vromont & Cie., 3 rue de la Chapelle.*
P. Vrydagts, 14 rue Otto Vénius.
P. Weissenbruch, 45 rue du Poinçon.*
J. Wichler, 95 rue du Midi.
J. B. Willens, 23a rue des Chartreux.
L. Wintraecken & Cie., 62 boulevard du Nord.
Franken Wodon, 35 rue des Eperonniers.
E. Wolff, 52 rue Quinaux.
Manufacture Cale, 13 boulevard de la Senne.
Meyer Nathan, 6 rue des Charbonniers.
Ducke & Cie., 116 rue du Marais.
Guys-Vals & Cie., 41 rue de la Victoire.
Lefevre, rue de Vourrion.
J. B. Merens, 69 rue Heyvaert.
Vomkerkhoven, place Communale Molenbeck St. J.*
P. J. Molitor, 9 rue Washington à Ixelles.*
Goffin fils, 108 rue Fonsuy St. Gilles.*
Société Biblique britannique et etrangère, Pépiniere 5.*
Société St. Jean l'Evangeliste, Mantaique 92.*
Société St. Charles Borromée, Montaique 92.*

At Antwerp.

A. Vilpaerts Vve., 11 rue des Fagots.
J. Baldenyns, 22 rue des Corroissiens.
Martin Bromvers & Cie., 23 Courte rue des Claires.
E. Delrue-Cortin Vve., 7 rue des douze mois.
Jrs. Depré, 21 Rempart du Lombard.
Gysilinck Hipp, 34 Marché aux Oeufs.
Richoord Huybrechts & Cie., 44 Courte rue de l'Hôpital.

At Antwerp—Continued.

Kockse & Cie., 49 Canal des Récollets.
Ste. Anne Lè Lion (firme), 7 rue de la Boutique.
Jos. G. Noennickx, 20 rue Reynders.
Ratinckx frères, 40 Grande place.*
Société Cooperative la Prévoyance (A. A. Peeters & Cie.), 27 Marché aux Boeufs.
Société St. Augustin et St. Jean l'Evangeliste, 22-1 Kipdorp.*
E. Stockmanns & Cie., 37 rue Otto Vénius.
Van den Abeele-Legros, 170 rue de la Province.
Wauters & Clamvaert, 992 Rempart des Béguines.
J. E. Buschmann, Rempart de la porte du Rhin.
J. B. van Os-Dervolf, 58 rue Nationale.
Vrydaght & Cie., 4 rue St. André.
O. Fast, 69 place de Meir.*
Louis Legros, rue Porte au Vaches 60 bis.*
Société Anonyme de Nederlandische Bockhardt, 50 Marché St. Jacques.*
J. Vandieren & Th. Coppinol.*
Van Opstal-marinus, Boogkeers, 13.*

At Gand.

B. Dekenkelaere, 44 rue Digue de Brabant.
E. Delacre, 159 rue Haute.
T. Hemelsoet & fils, 22 rue Neuve St. Jacques.
A. Hoste, 23 rue des Champs du Calvaire.*
F. Meyer-vanloo, 9 Quai des Ronneliers.
A. Siffer, 1 rue de la Croix.*
Snoeck-Ducajn, 8 rue des Champs.*
Vandermeulin frères, 22 rue Digue de Brabant.
J. Vanderpoorten, 18-20 rue de la Cuiller.*
Van Poosselaen, 54 rue de la Pêcherie.*
Van Pottelsberghe-Jacquirin, 3 rue Basse.
L. van Melle, 11 rue Jambon.
B. Bekenkelaen (Imprimerie Ccle), 31 rue Longue du Berger.
Buyck frères, 47 rue St. Georges.

At Malines.

Deroy Vve. J., 18 rue des Tanneurs.
H. Dessain, 7 rue de la Blanchisserie.*
C. Dirickx-Beke, 12 rue de la Chaussée.*
J. Olbrechts, 64 rue des Biggaids.
J. Ryckmans-Van Deuren, rue de la Chaussée.*
E. van Velsen, 2 rue Bailles de Fer.*
Steurs-Brussers, 16 rue de la Mélane (rélieur).

At Braine Le Comte.

L. Boonen.*
Eloy Vve. H.*
Lech & fils.*
D. J. Strenlet.

At Charleroi.

L. Delacre, 18 Quai de Brabant.
Gevris-Geubel, 15 boulevard Ondent.
Henry-Opinet, 52 rue de Marinneble.
E. Marechal, 45 rue de Montigny.*
A. Piette, 53 rue Neuve.
François Huart, Imprimerie Militaire.
L. Surin, agence Centrale de Publicité, passage de la Bourse 19.

At Mons.

Dequesne-Masquelier & fils, 25 Grand' rue.
Friart-Dufroisnes, 15 rue de la Station.
Levert-Carlier, 19 rue de Nimy.
Marin Noefint, D-C., 25 Terre du Prince.*
Verhelle-Goret, 10 rue Notre Dame.

At Tournai.

Bangines & Cie., 2 Réduit des Sions.
Deselée-Lefebvre & Cie., 76 avenue Maire.*
J. B. Delmée, 17 rue Puits l'Eau.
Leclercq & Cie., rue Four-Chapitre.
Ste. de St. Charles Borromée, 16 Curé Notre Dame.
Vasseur-Delmée, 3 Grand' place.
Corteman frères, 5 Tête d'Or.*

At Louvain.

J. Devondder, 21 rue Neuve.*
I. Tstas, 90 rue de Bruxelles.*
Massart Vve., 27 place du Peuple.*
C. Peeters, 20 rue de Namur.*
Savone Dekkers, J., & fils, 42-44 rue de Malines.*
Lefever frs. & jr., 30 rue des Orphelins.

At Nivelles.

M. Bernier.
Despret-Poliart.*
Jaquet Ferdinand, 57 rue de Bruxelles.
Lannenn et Despret.

At Liege.

Beck, 11 rue des Recollets.
R. Charron-Burton, 19 rue de Fetienne.
Ch. Aug. de Soer, 9 place St. Lambert.
Dessoin, 7 rue Trappé.*
Faust-Marlin & fils, 4 place de l'Université.
Goosens, 4 rue Pont d'Avroy.
E. Hubert-Magis, 17 rue St. Parul.
Imprimerie Liégoise, 46 rue Clarisses.
L. Michel-Lalienx, 21 rue du Pont d'Ile.
E. Laive, 16 Grande Tour.
Benard & Cie., éditeurs, 11–13 Lambert le Bigne.
Denartione, 8 Official.

At Verviers.

Chesselet-Nautet, 25 place du Martyr.*
C. Closset, 58 Crapanne.*
L. Croniquet et fils, 2 place du Martyr.*
Darimont frères, 9 Pont St. Laurent.*
Imprimerie Populaire, 45 rue du Collége.*
Vve. Massin, 188 rue Craponne.
A. Remacle, 19 rue des Carmes.

At Namur.

Bisser-Bois d'Enghien A., 75 rue de l'Ange.*
J. Dussagne, 25 rue de Bruxelles.*
E. Dupriereux, 24 rue St. Jacques.
J. Godenne, 13 rue de Bruxelles.*
Lambert de Roisin, 22 rue de l'Ange.*
Wesmarel Charlier Cr., 51 rue de Fer.*
Connet, 25 rue de Bruxelles.*
Auguste Godenne, 69 rue de l'Ange.

At Bruges.

E. Bonte, 2 rue des Bandets.
T. Cuypers, 18 rue St. Jacques.*
R. Daveluy, 7 Quai Vert.*
Derresann frs., 15 rue de la Main d'Or.
Desclée-De Bronner & Cie, Faubourg de Scheepsdael.
D. Fockenier, 4 rue Philipstock.*
E. Genens-Scéaux, 5 place St. Jean.*
Jules Daveluy, Ostende.*
F. Durant Wodin & Cie., at Anvelois.

At Bruges—Continued.

O. Vaubert, at Dour.
Victor Chevalier, at Cour St. Etienne.
Dufram Friart, at Frameries.
Arthur Burger, Manange.
O. Courtin Jourdoit, 11 rue de Roncourt, at Permvelz.
C. Goffin, at Spa.
Van Duyse Blanchaert, at Lokan.

At Bruges—Continued.

A. Engel Liévens, at Spa, boulevard des Amparis 38.*
Ehe Derverrichet-Huens, at Grez Boicean.
Van de Putte Goosens, rue Courte du Sel, at Alost.
Le Herte-Courtin, Renaux.
Lervin, Châtelet.

The chief articles manufactured from paper, the amounts of which it is impossible to ascertain, are boxes for packing purposes, bags, bobes for spinning purposes, and playing cards.

Without doubt, the consumption of paper is likely to increase. It is impossible, however, to furnish the figures of this expected increase.

PAPER IMPORTS.

In reply to the question as to which nationality dominates the paper trade and the relative importance of different nations, attention is hereby invited to the subjoined table, giving the importations into Belgium for the years 1897 and 1898:

Articles and whence imported.	1897.	1898.
Wall paper:	*Pounds.*	*Pounds.*
Germany	766,637	1,142,167
England	255,789	301,443
France	573,494	654,048
Hamburg	65,033	50,542
Holland	79,853	58,280
Sweden	125,090	97,017
Other countries	4,419	24,556
Cardboard:		
Germany	520,851	546,843
England	173,516	522,561
France	198,159	179,974
Hamburg	525,865	192,345
Norway	129,553	363,007
Netherlands	179,343	32,815
Sweden	759,278	1,325,188
Other countries	72,469	23,091
Paper, unclassified (comprising paper for printing, packing, writing, etc.):		
Germany	9,485,447	7,951,079
England	1,339,509	1,497,886
Austria	168,475	285,894
Denmark	170,283	11,709
United States	17,058	988,035
France	1,135,932	1,087,889
Hamburg	1,710,145	1,739,341
Italy	5,719	....
Norway	706,483	413,029
Netherlands	1,466,226	1,594,060
Russia	63,162	....
Sweden	1,226,362	1,791,565
Switzerland	11,597	....
Other countries	7,310	57,061

It is to be remarked that the figures above given represent what is called "commerce spécial" in this country—that is to say, they represent merchandise which has been declared for internal consumption either before importation or at the time of its release from the custom-house.

It will be observed that the importation during the year 1897 from our country was relatively of small importance, but considerably increased in 1898. From reliable sources, it is ascertained that, owing to the formation of a syndicate of Belgian newspaper publishers for the importation of the American product for their purposes, the Belgian manufacturers have been obliged to lower the price of the same variety of goods.

In regard to the valuation of the paper imported, referring to the table before given, in which the statistics of importation for the years 1897 and 1898 are stated, the valuation for customs purposes was in the case of wall paper 19.3 cents per 2.2046 pounds; cardboard, 3 cents per 2.2046 pounds; printing, packing, writing, and drawing paper, 9 cents per 2.2046 pounds.

IMPORTS AND EXPORTS.

The following table shows figures giving the total of Belgian importations and exportations of paper during the last four years. In this case, as in that of the table previously given, it will be borne in mind that the figures represent the special commerce of the country, as explained.

Year.	Imports.	Exports.
Wall paper.	*Pounds.*	*Pounds.*
1895	1,532,606	1,280,259
1896	1,872,851	1,456,888
1897	1,870,316	1,274,760
1898	2,328,056	1,541,316
Cardboard.		
1895	1,866,389	4,750,741
1896	1,928,731	5,552,975
1897	2,559,037	6,317,640
1898	3,185,826	5,987,474
Printing, wrapping, and drawing paper.		
1895	17,401,913	57,369,075
1896	17,602,142	74,921,808
1897	17,513,715	68,849,197
1898	17,417,555	72,531,471

In all cases where figures are given, the sources from which they have been taken are the latest publications of the treasury, the Department of Railroads, and the Department of Industry and Labor, and, in my opinion, complete confidence can be placed in their accuracy.

No figures of manufactures of paper are included in those furnished.

Paper exports.

Articles and whither exported.	1897.	1898.
	Pounds.	*Pounds.*
Wall paper:		
Germany	70,946	66,637
England	44,051	218,905
Brazil	26,174	33,452
Chile	15,165	....
China	....	....
Spain	20,369	....
United States	9,684	....
France	705,707	676,777
Grand Duchy of Luxemburg	19,221	1,893
British India	29,502	....
Netherlands	249,010	314,237
Argentine Republic	13,605	....
Switzerland	31,803	....
Other countries	39,517	229,412
Cardboard:		
Germany	23,805	....
England	1,507,657	1,477,607
Australia	216,254	....
Brazil	89,063	72,665
Spain	137,983	24,843
United States	352,800	....
France	200,138	....
British India	1,233,946	2,077,759
Mexico	2,587	....
Netherlands	124,653	212,345
Argentine Republic	1,399,771	922,770
Turkey	610,660	340,001
Egypt	....	117,940
Other countries	418,316	740,436
Paper unclassified (comprising printing, packing, and drawing):		
Germany	579,700	756,077
England	28,912,766	33,336,102
Australia	1,288,969	1,208,748
Austria	152,865	....
Brazil	4,175,262	5,005,987
Canada	210,869	....
Cape of Good Hope	228,609	....
Chile	374,067	362,932
China	793,151	490,558
Denmark	340,414	555,220
Egypt	439,385	530,797
Spain	381,373	298,064
United States	1,129,360	854,847
France	3,596,357	2,790,903
Greece	395,424	....
Hamburg	3,019,133	2,595,165
British India	1,018,386	1,393,939
Dutch Indies	816,044	929,232
Italy	52,124	....
Japan	1,362,270	1,014,873
Mexico	242,424	....
Norway	1,729,701	673,059
Netherlands	12,860,388	12,790,673
Peru	145,618	....

Paper exports—Continued.

Articles and whither exported.	1897.	1898.
Paper unclassified, etc.—Continued.	*Pounds.*	*Pounds.*
Portugal	32,890	
Argentine Republic	1,499,901	1,590,267
South African Republic	325,859	
Roumania	27,369	
Russia	71,343	
Sweden	151,637	
Switzerland	200,339	
Turkey	1,793,147	1,754,690
Uruguay	125,480	
Other countries	376,560	3,402,726

PRODUCTION.

With the exception of a few turbine water wheels, of a total of about 450 horsepower, no use is made by the Belgian manufacturers of water power.

The fuel generally used is native coal (half soft), which costs from $1.73 to $1.93 at the point of production.

The facilities of transportation are at every hand and are afforded at very cheap rates.

The country furnishes an abundance of rags, which are exported in large quantities from this port and Ghent, for use as paper stuff. The wood pulp used here by manufacturers has been heretofore largely imported from Norway, Austria, Germany, and Canada, although recently inquiries have been made here for some varieties of the American product.

The varieties of wood pulp used are the mechanical, the half chemical, the soda pulp, and the bisulphite. Other raw materials used in the manufacture are china clay, sulphate of baryte, clay, and ocher. The methods of manufacture employed are modern.

Mechanical industries in Belgium being in a highly developed state, and the country containing a large number of skillful and intelligent mechanics and workmen, special facilities exist here for the construction of all kinds of machinery and tools demanded in the paper industry.

The following named are the best known machines made here: "Pilles raffineuses" for mixing the pulp, "machines continues" for making paper, "calandres à satiner" for surfacing, "coupeuses" for cutting purposes.

The "machines continues" of Belgian make are said by the paper makers to be superior to those manufactured in the neighboring competing countries. The centers of production of this machinery are Huy, Nixelles, and Willebroeck. Further, metal covers for manufacturing purposes are constructed at Sarenthem, and the felt at Liege and at Virginal.

There is only one factory in existence which makes paper by hand at the charge of the Belgian Government. In all the other factories, the "machines continues" are used.

The number of mills, as before stated, is thirty-three, and the output of the same for the year ended December 31, 1898, was as follows:

Articles.	Quantity.	Value.
	Tons.	
Cardboard	8,000	$192,035
Paper:		
Packing	22,000	1,158,000
Printing	34,000	4,053,000
Writing	14,000	
Total	78,000	5,211,000

Of the amounts given in the above table, about half are exported and the rest consumed in the country itself.

Steam power is generally employed, and the methods and processes of manufacture are modern.

Apparently, the methods of manufacturing are improving and the production is likely to increase.

WAGES.

At nearly every paper mill, labor is remunerated in proportion to its producing power. A certain amount of waste in the process of manufacture is always presumed and calculated upon, and the workman receives a premium estimated upon the value of the waste he prevents, and is subject to a reduction of his wages in proportion to the excess of waste caused by him.

Taking into consideration the fact as above stated, the average cost of labor in the principal mills may be stated to be as follows for a day of ten hours' work:

Workmen.	Wages.	Workmen.	Wages.
	Cents.		*Cents.*
Overseers	87	Cutters	68
Workers at machines	97	Chief mixers	77
Dryers	58	Mixers	58
Boys	21	Helpers	48
Finishers	68	Distributers (girls)	29

The law prohibits the employment in these factories of boys under the age of 14 years and of girls under the age of 16. The boys are ordinarily employed six months at the rate given in the above table, at the expiration of which time they are advanced to the rate of 39 cents a day and considered second-class workmen.

In the two principal manufactories known to me, within the working day of ten hours one hour's time is devoted to the instruction of the boys and girls in the elementary branches of study. In addition to this, one hour is devoted to the manual instruction of the girls.

Labor in paper mills is considered very efficient.

IMPORT DUTY.

The import duty on wall paper is $1.54 per 220.46 pounds; on all other classes, including cardboard, writing, drawing, and printing paper, 77 cents per 220.46 pounds.

BANKING AND MAIL FACILITIES.

The banking facilities existing here are such as are found in all leading European states, and financial connections with every country exist.

The mail and telegraphic facilities are excellent and constant.

OUTLOOK FOR AMERICAN TRADE.

Just what other countries are doing at the present moment to build up their export trade in this particular line of manufacture is unknown to me; but probably producing countries are using the same means they have always employed, to wit, introducing their goods to the notice of the public and possible purchasers by the aid of capable representatives.

As to what opening exists for the articles of American manufacture of the varieties in question, the same answer can be given as in the case of nearly all of our like productions. The only article for which a demand has been made at my office, mentioned in the list given, has been pulp of the bleached dry-soda variety. The uniform excellence, and in many cases superiority, of the manufactured products of our country is almost universally admitted; but the fact must not be overlooked, and it is probably not by our business men, that to-day cheapness of price is as often sought for as excellence of quality in the article itself. Probably, in the case of the articles referred to (and this is true of nearly every manufactured article exported from our country) the greatest obstacles to success would be found in the exertions put forward by our German competitors. The reasons for the foregoing observation are so obvious and have been so often commented upon that it seems wholly unnecessary to repeat them here.

To insure any measure of success on the part of our manufacturers, it will be necessary for them to endeavor to find a market for their goods by the employment of capable, straightforward, plain-dealing salesmen, competent to make themselves understood in the language of the country to which they are sent and of conforming somewhat to the usages and business habits of the people thereof.

It is also necessary to submit goods of a quality and kind demanded by the trade and habits of the people in question. Also, it must be borne in mind that inhabitants of these older countries—the trade of which we are seemingly now attempting to acquire—are very conservative in their ideas, not accustomed as we are to the constant presentation of novelties in design and manufacture, and by no means so appreciative as the mass of our people of improvements in either of the directions referred to.

In seeking for the trade of a country situated like this, with long-established business and financial connections with their immediate neighbors, we shall naturally be forced to conform to its existing usages as to terms of sale, credit, and payment. To force business houses to pay for goods at time of shipment, on presentation of draft accompanying bill of lading at a New York bank, is not likely, in my judgment, to lead to much success. If our manufacturing interests were properly represented on the Continent—as many of them are in England, according to report—it would seem to me that it would be as easy for them to conform to existing usages here as for manufacturers of other nations.

The interest of the foreign commission house intrusted with the introduction of articles of our manufacture ceases the moment it is able to place on the market articles of similar character and appearance, produced in some neighboring country, at a lower price than those of our manufacture.

There are in Belgium no periodicals whatever containing articles on paper making. Since May, 1897, there is published, however, a monthly Review Graphique Belge in the special interest of printers and lithographers, which has met with a wide success among its special clientele. The paper is published at the printing office of Xavier Havermans, 40 Galerie du Commerce, at Brussels; the annual subscription to this review is, for foreign countries, 6 francs (about $1.16). It contains a large quantity of advertising relative to the paper trade and to the printing business.

SCHEDULE FOR TRANSPORTATION.

Transportation in Belgium is invariably conducted by either rail or water ways, both of which are controlled by the Government.

By railway, small packages weighing not more than 22 pounds can be sent per express and also by rapid freight according to the appended table.

Distances.	Express, per parcel.		Rapid freight, per parcel.	
	11 pounds and less.	13 to 22 pounds.	11 pounds and less.	13 to 22 pounds.
	Cents.	*Cents.*	*Cents.*	*Cents.*
Up to 15 miles	15	17	10	10
16 to 46 miles	15	19	10	12
47 miles to any other distance	15	19	10	13

Packages weighing more than 22 pounds and less than 2,204 pounds can be transported by express, or, to the limit of 4,408 pounds, by rapid freight.

Goods to be transported by slow freight are divided into four classes, according to their nature, and taxed by minimum weight of 2,204 pounds. For instance:

Rags, class 3.
Wood for pulp, class 3.
Ground wood, class 4.
Chemical fibers, class 3.
Other fibers or stock, class 3.
Writing or fine paper, class 1.
Printing paper for books, class 1.
Printing paper for newspapers, class 1.
Wrapping paper, class 1.
Other grades, class 1.

Fuel (coal), class 4, must be transported by carloads of minimum weight of 11,020 pounds and is also shipped by carloads of 22,046 pounds.

When a shipment contains merchandise of different classes, it is taxed according to the rates fixed for the highest class. Shipments of the fourth class are made in open wagons, and the carrier declines all responsibility for damages which may result from this method of transportation.

Rates of freight by water ways are determined by contract and depend upon distance of hauling, bulk of shipments, nature of contents, etc., and manner of packing.

As to the connections of this port with the interior of the country by canals and railways, reference is invited to the account furnished by me as published in the Commercial Relations of the United States for 1896–97, Vol. II. In the series of articles therein contained will be found a description of the means of communication with foreign countries, by water and rail, afforded at this port, as well as the tariff of terminal charges.

GEO. F. LINCOLN,
Consul-General.

ANTWERP, *March 8, 1899.*

BRUSSELS.

In reply to Department circular dated November 16, 1898, I have to state that, although I have exerted my best endeavors in every possible channel to secure the information called for, I regret to say that, while dealers and manufacturers of paper in this district have acknowledged receipt of my communications on the subject with respectful deference, they have not given me any really valuable information. I therefore forward such data as I have been enabled to obtain under the unfavorable circumstances.

POPULATION.

The total population of this consular district December 31, 1897, was 2,659,523. The decennial increase is about 10 per cent. The number of illiterates, according to the latest statistics, was 896,717.

The Belgians are essentially a manufacturing people, expert in all mechanical trades, excellent engineers, and clever inventors. Among the uses of paper in this district may be mentioned printing, lithographing, photographing, drawing, writing, tracing, copying, wrapping, filtering, etc., for ordinary kinds of paper. For electrochemical works, spinning mills, laboratories, and for filtering in sugar mills, vegetable parchment paper is employed. There are no industries peculiar to the country requiring paper as raw material.

The kinds of paper used at present are paper for printing, lithographing, photographing, drawing, writing, tracing, copying, wrapping, filtering, etc., wall paper, sandpaper, blotting paper, cardboard, and pasteboard.

SPECIAL REQUIREMENTS AS TO QUALITY, WEIGHT, AND SIZE.

It is very difficult to ascertain the special requirements as to quality, weight, or size, as such conditions vary according to the uses for which the paper is intended. Belgium produces paper for very nearly all known uses.

The market prices vary according to quality, weight, cost of manufacturing, and raw material, as, for example, ordinary Belgian wall paper sells at from 2 to 15 cents per roll of 8 meters (8.75 yards), an excellent quality of embossed paper at 27 cents per roll, and best leather-embossed paper as high as $5.80 per roll; wrapping paper, at 77 cents per roll; sandpaper, from $2.90 to $4.25 per 1,000 sheets, according to quality; blotting paper, from 87 cents to $5.79 per ream of 500 sheets.

The price for parchment paper varies according to quality and purpose of employment, as follows: For packing purposes, from 10 to 11 cents per pound; for sugar refineries, 68 cents per 2.2 pounds; woolen and other mills, from 29 to 39 cents per 2.2 pounds; imitation leather and oilcloth, from 24 to 33 cents per 2.2 pounds.

TERMS OF SALE.

There are no fixed terms of sale. Each manufacturer is governed in granting discounts on prices, easy terms for payment (thirty, sixty, and ninety days), by the importance which he attributes to each buyer, and according to his commercial standing.

There are in Belgium 68 paper mills and factories, and in this consular district 31 mills, 37 firms representing paper manufacturers, some 63 wholesale dealers, and about 235 retail dealers.

PAPER MILLS.

Brabant.

G. de Connek, Alsemberg.
Ferd. Delcroix, Baulers.
J. Delcroix, Baulers.
P. Seguin, Bornival.
De Broux & Co., Bornival and Court St. Etienne.
De Naeyer & Co., Cramhem.
A. & X. Windericka, Dieghem.
G. F. Stevens, Droogenbosch.
Ste. An. les papeteries de Gasbeche, Grez-Doicean.
Vanhemebryck & Co., Hal.
G. Demeurs & fils, Huyssengen.
A. Jacquet, Ittre.
Ste. Ane. de l'Union des Papeteries, La Hulpe.
P. Stevens, Lemberg-lez-Hal.
A. Adant, Lemberg-lez-Hal.
Ste. Ane. des l'Union des Papeteries, Limal.
Ste. Ane. des l'Union des Papeteries, Mont St. Guibert.

Brabant—Continued.

F. Del Croix, Nivelles.
Papeterie de Baules, Nivelles.
Alph Jacquet, Nivelles.
Demeurs frère & Sœurs, Rhode St. Genése.
F. de Kendere, Saventhem.
Ste. Ane. des papeteries de Saventhem, Saventhem.
Demeurs frère & Sœurs, Tourneppe.
Ste. Ane. des papeteries de Virgune, Virgmal-Sanne.

Hainaut.

Vve. V. Catala, Braine-le-Comte.
A. Ducober, Thulir.

Namur.

E. L. Godin & fils, Andeune.
Ste. Ane. des papeteries Namuroise, Namur.
Ste. Ane. des papeteries Namuroise, St Servais.

The following are the principal dealers:

Brussels.

J. Colin & A. Platz.
Lucien Desbordes.
Vve. De Tournay-Catala.
Louis Hecht.
A. Hélaers.
Chas. Maes.
Mawnoury Wolff & Co.
Jos. Schwieger.

Brussels—Continued.

Société An. des Papeteries de Virginal.
E. Thomas.
Union des Papeteries.

Namur.

E. de Cost.

Charleroi.

E. Detry.
J. L. Lefebvre.

PUBLICATIONS.

There are 359 publications in Brussels—that is, 47 daily and weekly newspapers, 13 governmental periodicals and reviews, 19 law, 14 sporting, 9 army, 26 illustrated, 13 public instruction, 10 musical and theatrical, 76 commercial and industrial, 9 fashion, 15 scientific, 29 medical, 25 social science, 13 religious, 11 agricultural, and 30 financial. There are 440 printers and lithographers in Brussels and 13 publishers. As before stated, there is no industry in Belgium using paper as raw material for manufacturing articles or objects. Pulp is used in making paper and cardboard.

The undeveloped or developed water power in this country is not of sufficient importance to be used as motor power for paper mills.

Facilities by rail and canal for transporting raw and manufactured material to and fro are available by all the mills.

FUEL.

Native coal, suitable for mill use, is cheap and abundant, and is easily conveyed to the mills by rail, canal, and river. The price at the mine is about $1.84 per ton.

The only raw materials contributed by the country are rags, straw, and a small quantity of alfa and esparto. Imported wood pulp, ground and chemical, or pulp made from imported wood, are the principal raw materials used. I am informed that no difficulty has been experienced in securing any quantity of the raw material desired.

WAGES.

The average wages paid per week in paper mills in the Brussels consular district are:

Overseers	$6.00 to $9.00
Men	2.90
Women	2.50
Boys and girls	1.38

Children under 14 years of age are not employed.

PARCHMENT PAPER.

There are 31 paper mills in the Brussels consular district. The following firms are engaged in the manufacture of parchment paper: F. Delcroix, Baulers, Hainaut; De Bronx & Co., Noirhat, Brabant; Union des Papeteries, 9 rue d'Arenberg, Brussels. The above-named firms collectively manufacture about 1,322 tons of parchment paper annually. Generally, steam power is used, and the paper is machine made. The methods of manufacture are modern, and the newest improvements are applied in the processes. Production is increasing.

KINDS OF PAPER IMPORTED.

Printing, wrapping, writing, drawing, wall paper, and cardboard are imported. Germany dominates the paper trade in this district.

The average market price in 1897 for printing, wrapping, and drawing paper per kilogram (2.2 pounds) was 47 centimes (9 cents); wall paper, 1 franc (19.3 cents); cardboard, 15 centimes (2.8 cents).

PRICES OF PAPER.

Description.	Size of sheets, in centimeters (0.3937 inch).	Weight per 500 sheets.		Price per 100 kilograms (220 pounds).	
White printing paper.					
Not glossed:		*Kilograms.*	*Pounds.*	*Francs.*	
Grand raisin	50 by 65	8 to 14	17.6 to 30.8	27 to 50	$5.21 to $9.65
Double grand rasin	65 by 100	16 to 28	35.2 to 61.6	27 to 50	5.21 to 9.65
Jésus	55 by 73	9 to 15	19.8 to 33	27 to 50	5.21 to 9.65
Colombien	62 by 85	12 to 18	26.4 to 39.6	27 to 50	5.21 to 9.65
Quadruple propatria	69 by 86	12 to 16	26.4 to 35.2	27 to 50	5.21 to 9.55
Glossed:					
Grand raisin	50 by 65	8 to 20	17.6 to 44	35 to 60	6.18 to 11.58
Double grand raisin	65 by 100	16 to 40	35.2 to 88	35 to 60	6.18 to 11.58
Jésus	55 by 73	10 to 20	22 to 44	35 to 60	6.18 to 11.58
Colombien	62 by 85	16 to 20	35.2 to 44	35 to 60	6.18 to 11.58
Writing paper.					
Rosette *	27 by 34.7	2.5 to 5	4.9 to 11	50 to 70	9.65 to 13.51
Pot *	30.7 by 38.4	3 to 4	6.6 to 8.8	50 to 70	9.65 to 13.51
Lys *	31.7 by 39.7	4 to 6	8.8 to 13.2	50 to 70	9.65 to 13.51
Propatria	34.5 by 43	4 to 9	8.8 to 19.8	50 to 70	9.65 to 13.51
Ruche †	36 by 46.2	5 to 10	11 to 22	50 to 70	9.65 to 13.51
Petit median †	40 by 53.3	7 to 14	15.4 to 30.8	50 to 70	9.65 to 13.51
Grand median †	46 by 60.5	8 to 18	17.6 to 39.6	50 to 70	9.65 to 13.51
Royal	48 by 63.5	18 to 20	39.6 to 44	50 to 70	9.65 to 13.51
Super royal	50 by 70	20 to 25	44 to 55	50 to 70	9.65 to 13.51
Imperial	54.7 by 73	18 to 30	39.6 to 66	50 to 70	9.65 to 13.51
Petit aigle	60 by 84	33 to 40	72.6 to 88	90 to 150	17.37 to 28.95
Grand aigle	70 by 104	47 to 60	103.4 to 132	90 to 150	17.37 to 28.95

* Exist in quadruplicate size.

† Exist in duplicate size.

Prices of paper—Continued.

Description.	Size of sheets, in centimeters (0.3937 inch).	Weight per 500 sheets.		Price per 100 kilograms (220 pounds).	
Letter paper.					
Coquille:		*Kilograms.*	*Pounds.*	*Francs.*	
Printing	44 by 56	6 to 10	13.2 to 22	32 to 50	$6.18 to $9.65
Writing	44 by 56	6 to 12	13.2 to 26.4	50 to 70	9.65 to 13.51
Finished (parte)	44 by 56	6 to 14	13.2 to 30.8	70 to 125	13.51 to 24.13
Parchment	44 by 56	6 to 12	13.2 to 26.4	90 to 150	17.37 to 28.95
Colored	44 by 56	6 to 12	13.2 to 26.4	50 to 125	9.65 to 24.13
Pelure	44 by 56	3 to 5	6.6 to 11	130 to 200	25.09 to 38.60
Half pelure	44 by 56	3 to 5	6.6 to 11	125 to 150	24.13 to 28.95
Copying paper (*for letter copy books, etc.*).					
Coquille	45 by 67	3 to 3.25	6.6 to 7.1	125 to 150	24.13 to 28.95
Coquille (a grandi)	47 by 60	3 to 3.25	6.6 to 7.1	125 to 150	24.13 to 28.95
Double ruche	47 by 73	4	8.8	125 to 150	24.13 to 28.95
Drawing paper (*white and colored*).					
Petit aigle	60 by 84	33 to 40	72.6 to 88	100 to 200	19.30 to 38.60
Grand aigle	70 by 104	47 to 60	103.4 to 132	100 to 200	19.30 to 38.60
Packing paper.					
Elephant (tarred)	61.6 by 77	6 to 30	13.2 to 66	28 to 37	4.80 to 7.14
Elephant (one-fourth white)	61.6 by 77	6 to 30	13.2 to 66	30 to 45	5.90 to 8.68

Colored printing paper (not glossed), same sizes and weight as above, from 32 to 55 francs ($6.18 to $10.62) per 100 kilograms (220 pounds).

Colored printing paper (glossed), same sizes and weight as above, from 35 to 65 francs ($6.75 to $12.54) per 100 kilograms (220 pounds).

The packing paper is also sold by rolls of from 80 to 140 centimeters (31.5 to 55 inches) in height and weights 70, 100, and 160 kilograms (154, 220, and 334 pounds) per square meter (10.76 square feet); the price is from 28 to 45 francs ($5.40 to $8.68) per 100 kilograms (220 pounds).

BANKING FACILITIES.

The banking facilities for the European countries are through the different Belgian and other European banks. Payments are made by drafts or checks at thirty, sixty, or ninety days, or by letters of credit. For Australia, China, India, Japan, and the United States, all drafts are via London. For the Argentine Republic, Brazil, Chile, Egypt, and Turkey, drafts and letters of credit are through English and French banks.

The import business in this market is controlled by Germany. I am also informed that nearly all manufacturers of European countries having commercial relations with Belgium are represented in this district by commercial agents, who are furnished with a full line of samples and who enjoy discretionary privileges as to payments, discounts, etc.

MAIL AND TELEGRAPH FACILITIES.

Mail facilities between Brussels and foreign countries are as follows:

To—	Service.	Time occupied.
Argentine Republic (Buenos Ayres)	Monthly via Southampton	22 days.
	Monthly via Lisbon	Do.
Australia (Sydney)	Monthly via Bremen	36 days.
	Monthly via Hamburg	Do.
	Monthly via San Francisco	Do.
	Monthly via Marseilles	Do.
Austria (Vienna)	5 mail services daily	30 hours.
Brazil (Rio de Janeiro)	Monthly via Southampton	17 days.
	Monthly via Lisbon	Do.
	Semimonthly via Bordeaux	Do.
Chile (Valparaiso)	Monthly via Liverpool	39 days.
	Monthly via Lisbon	34 days.
China (Hongkong)	Monthly via Naples	32 to 40 days.
	Semimonthly via Brindisi	Do.
	Semimonthly via Marseilles	Do.
Denmark (Copenhagen)	2 mail services daily	41 hours.
Egypt (Alexandria)	Semiweekly	6 days.
England (London)	Three mail services daily via Ostende	7½ hours.
France (Paris)	5 mail services daily	5 hours.
Germany:		
Berlin	3 mail services daily	13 hours.
Bremen	do	14 hours.
Hamburg	do	13 hours.
Grand Duchy of Luxemburg	do	7 hours.
Holland:		
Amsterdam	5 mail services daily	4 hours.
Rotterdam	do	3¼ hours.
India (Bombay)	Weekly via Brindisi	17 days.
India, Dutch (Batavia)	Semimonthly via Marseilles	27 days.
	Semimonthly via Brindisi	Do.
	Monthly via Naples	Do.
Japan (Yokohama)	Semimonthly via Marseilles	43 days.
Norway (Christiania)	2 mail services daily	2 days.
Spain (Madrid)	3 mail services daily	46 hours.
Turkey (Constantinople)	Semiweekly via Marseilles	78 hours.
	1 mail service daily	Do.
United States (New York)	Via Queenstown from Brussels, Wednesday and Saturday.	8 days.
	Via Southampton by German steamer, Tuesday; by American steamer, Friday.	Do.
	Via Antwerp, Saturday	Do.
	Via Havre, Friday	Do.

Belgium has telegraphic communication with all countries to and from which paper is exported and imported, as follows:

Argentine Republic.—Via Falmouth-Madeira; Falmouth-Teneriffe; France-Madeira; France-Teneriffe; Marseilles, Malta, and Madeira; Marseilles, Malta, and Teneriffe; Galveston.

Austria.—Via Germany-Holland or France-Switzerland.

Australia.—Via Penang, Russia, Turkey.

Brazil.—Via Falmouth-Madeira; Falmouth-Teneriffe; France-Madeira; France-Teneriffe; Marseilles, Malta, and Madeira; Marseilles, Malta, and Teneriffe.

Chile.—Via Falmouth-Madeira; Falmouth-Teneriffe; France-Madeira; France-Teneriffe; Galveston.

China.—Via Singapore, Russia, Turkey.

Denmark.—Via Germany-Holland; Germany-Sweden; Calais (via France to Denmark).

Egypt.—Via Marseilles-Malta or Italy-Malta; Italy-Zante or Trieste-Zante; Italy, Vallona, and Eldrich; Austria, Turkey, and Eldrich; Falmouth-Malta.

England.—Direct cable or via France, Holland, or Germany.

France.—Direct telegraph or via Luxemburg, Germany, or England.

Germany.—Direct telegraph or via Holland.

Grand Duchy of Luxemburg.—Direct telegraph or via France or Germany.

Holland.—Direct telegraph or via Germany or England.

India.—Via Russia or Turkey.

India (Dutch).—Via Singapore, Russia, Turkey.

Japan.—Via Russia or Turkey.

Norway.—Via Germany, Calais, Denmark, or England, or direct cable.

Spain.—Via Emden, Vigo, Marseilles, Barcelona, Falmouth, or direct cable.

Turkey.—Via Marseilles, Malta, Otranto, Vallona, Germany, Austria, Trieste, Zante.

United States.—French cables; Anglo-American Company; Direct United States Cable Company; Western Union Telegraph Company; Commercial Cable Company.

IMPORT DUTY ON PAPER.

		Francs.
Wall paper	per 100 kilograms (220.46 pounds)	8=$1.54
Cardboard	do	4= .77
Printing, wrapping, writing, drawing paper, etc	do	4= .77

AMERICAN PAPER, PULP, ETC.

Dealers in this consular district state that there is very little, if any, demand for American paper, pulp, and articles manufactured from paper. I am of the opinion, owing to the excellent quality and artistic finish of nearly all our paper products, that if our manufacturers would send to this country capable, expert, energetic commercial representatives having a knowledge of the French language, with a complete line of samples (not illustrated catalogues), so as to familiarize the trade with our products, and offer the same conditions as are extended by other countries, a large percentage of the paper trade on this market might be controlled by American manufacturers.

KINDS OF PAPER EXPORTED.

These include wall paper, cardboard, printing, writing, wrapping, drawing paper, and vegetable parchment paper.

PRICES AT POINT OF SHIPMENT.

Ordinary Belgian wall paper sells at from 2 to 15 cents per roll of 8 meters (8.75 yards); cardboard, at 3 cents per kilogram (2.2046 pounds); wrapping paper, from 1½ to 3½ cents per pound; vegetable parchment paper for packing purposes varies in price, according to quality, from 10 to 11 cents per pound; paper for sugar refineries, 68 cents per kilogram; paper for woolen and other mills, from 29 to 39 cents per kilogram, according to quality and thickness; imitation leather and oilcloth, from 24 to 34 cents per kilogram.

There are no export duties or tariffs on paper.

TRANSPORTATION FACILITIES.

The present conditions for transportation of goods in Belgium and to other countries are considered excellent. Goods coming from the United States to this country are landed directly on the docks at Antwerp, and are shipped to the interior towns and cities by railroads and canals. There are four rivers in Belgium—the Scheldt, Meuse, Sambre, and Rupel—navigable for large boats and a number of canals navigable for small boats. The connections between Antwerp and the cities of Brussels, Ghent, Bruges, Louvain, Mons, Charleroi, Tournai, Namur, and a number of small towns are by water. Most all the heavy freight is transported by water and the light freight by railroad. The connections by railroad are from Antwerp to Malines, Brussels, Mons, and Paris, France; Antwerp to Malines, Louvain, Liege, Verviers, and into Germany via Cologne; Antwerp to Termonde, Ghent, Bruges, and Ostende; Antwerp to Ghent and Lille, France; Antwerp to Brussels and Basel, Switzerland.

There are six lines of ocean vessels plying between Belgium and the United States:

Red Star Line, Antwerp to New York and Philadelphia, weekly; passengers and freight; length of passage, from nine to eleven days.

Puritan Line, Antwerp to Baltimore and Boston, monthly; passage, thirteen to sixteen days.

Wilson Line, Antwerp to New York, fortnightly; passage, twelve to fourteen days.

White Cross Line, Antwerp to New York and Boston, monthly; passage, thirteen to fifteen days.

New Orleans Line, Antwerp to New Orleans, monthly.

San Francisco Line, Antwerp to San Francisco, San Diego, Portland, Port Townsend, Everett, Seattle, and Tacoma, monthly; sailing vessels.

FREIGHT CHARGES.

Freight charges on the canals vary according to the season and the amount and kind of freight. The basis is from 1 to 4 francs (19.3 to 72.2 cents) per ton, according to distance. Merchandise is transported on the railroads according to the following tariffs:

Tariff No. 1, express.—For merchandise to be delivered at domicile, per package of 5 kilograms (11 pounds) or less, 80 centimes (15.4 cents); packages from 7 to 10 kilograms (15.4 to 22 pounds), as follows, per package: 1 to 25 kilometers (15½ miles), 90 centimes (17.4 cents); 26 to 75 kilometers (16.1 to 47.2 miles), 1 franc (19.3 cents); 76 kilometers (47.8 miles) and above, 1.10 francs (21 cents); packages of more than 10 kilograms (22 pounds): 1 to 25 kilometers (15½ miles), 1.10 francs (21 cents); 26 kilometers (16.1 miles) and above, 1.20 francs (23.1 cents); maximum weight, 200 kilograms (442 pounds).

Tariff No. 2, fast freight.—For small articles, packages of 5 kilograms (11 pounds) or less, 50 centimes (9.6 cents); packages of 6 to 10 kilograms (13.2 to 22 pounds), from 1 to 25 kilometers (0.62136 to 15.5 miles), 50 centimes (9.6 cents); 26 to 75 kilometers (16.1 to 47.2 miles), 60 centimes (11.5 cents); 76 kilometers (47.8 miles), 70 centimes (13.5 cents); packages of more than 10 kilograms (22 pounds), 1 to 25 kilometers (0.62136 to 15.5 miles), 60 centimes (11.5 cents); 26 to 75 kilometers (16.1 to 47.2 miles), 70 centimes (13.5 cents); 76 kilometers and above (47.8 miles), 80 centimes (15.4 cents); maximum weight, 200 kilograms (442 pounds).

Tariff No. 3, slow freight.—For all merchandise, per 1,000 kilograms (2,204.6 pounds): First class—1 to 5 kilometers (0.62136 to 3.1 miles), 1.60 francs (30.8 cents) per package; for each kilometer above 5 (3.1 miles), 8 centimes (1.5 cents) per kilometer; second class—1 to 5 kilometers (0.62136 to 3.1 miles), 1.40 francs (27 cents) per package; for each kilometer above 5 (3.1 miles), 8 centimes (1.5 cents) per kilometer; third class—1 to 5 kilometers (0.62136 to 3.1 miles), 1.30 francs (25 cents) per package; for each additional kilometer, 6 centimes (1.1 cents); fourth class—for 1 kilometer (0.62136 mile), 56 centimes (11.1 cents); 6 centimes (1.1 cents) for each kilometer after the first kilometer.

Ocean freight.—The rates for freight charges between Antwerp and the United States vary with different articles and with the fluctuations in the freight market. They depend largely upon competition, the size of the cargo, and rate of the ship. The average charges from Antwerp to New York, Boston, and Philadelphia for heavy goods, rate determined by weight, are $1.50 per ton; for light articles, rate determined by space occupied, $5 per ton and 10 per cent additional per 40 cubic feet; from Antwerp to New Orleans, $1.82 per ton, which is not considered excessive here.

PUBLICATIONS.

La Revue Graphique Belge, Xavier Haverman, proprietor and editor, No. 40 Galerie du Commerce, is the only publication in Brussels containing articles on paper making.

I may state that the foregoing data were obtained from the latest Government statistics, the commercial museum, a manufacturer, and paper dealers at Brussels.

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *February 27, 1899.*

LIEGE.

POPULATION.

The population of this consular district, according to the census of 1893, was 1,275,461, and the present estimated population is 1,380,109. The percentage of illiterates above 8 years is 16. The Belgian is very ingenious and is the producer of very good grades of paper, as well as superior articles in nearly every line.

CONSUMPTION.

All kinds of paper are in general use in this district. There are no industries consuming paper in particular. Printers employ various grades of paper, and the publishers of newspapers and periodicals use, principally, ordinary white wood-pulp print of medium weight.

There is consumed in this district each year about 2,750,000 pounds of print paper, which costs from 2¾ to 3¼ cents per pound; 300,000 pounds of poster paper, at from 4½ to 5¼ cents per pound; 4,000,000 pounds of writing and flat paper, at from 6 to 14 cents for flat paper to 20 to 30 cents for the higher grades of linen paper; 1,000,000 pounds of cardboard at from 7 to 14 cents per pound; and 8,000,000 pounds of wrapping paper at from 2¼ to 5½ cents per pound. Nine-tenths of this paper is of domestic production. The finer grades of linen and bond paper are imported from France, and the better grades of book paper largely from Germany. But little paper from the United States is consumed in this district.

There are 84 retailers, 9 wholesale houses, and 1 very large paper mill, where all kinds and grades of paper, excepting the finer linens, bonds, and stationery papers, are made. The wholesale dealers are: Dupont-Toussaint, Defrays Brothers, Faust-Martin, Widow Protin, Liege; E. Gilon, Verviers; Papeteries Godin, Huy. The latter is one of the largest manufacturers and dealers on the Continent.

There are 1,065 printers employed, at from 3 cents to $1.55 per day, as follows: Three at less than 10 cents per day, 116 at less than 20 cents, 129 at less than 40 cents, 214 at less than 60 cents, 296 at less than 80 cents, 151 at less than $1, and 158 over $1.

There are 217 publications in this district, as follows: Sixteen dailies, 113 weeklies, and 68 periodicals. Their circulation is small as compared with like publications in the United States.

The greater part of the paper consumed in this consular district is of Belgian production. Germany furnishes more than one-half of the imports, with Holland second and the United States seventh in the list, the latter having $6,442 out of a total of $363,136 imported in the year 1897.

The exports of paper from Belgium for the year 1897 were considerably more than double the imports.

PRODUCTION.

Water power is very largely utilized, and I doubt if any remains that is worth developing.

Coal is the only fuel used, and a good steaming quality can be had, delivered at the works, for from $1.75 to $2 per ton.

An inexhaustible supply of a species of fir is found near the paper and pulp mills in this country, and is delivered at the factory on trucks. Large quantities of esparto are imported from Spain, Italy, and Algeria. The cost of this can not be learned. Rags and waste can be secured very cheaply.

Thiry & Co., at Huy, are large manufacturers of all kinds of the most improved paper machinery.

There is but one paper mill in this consular district—E. L. Godin & Co., at Huy—which employs 1,800 persons, and produced in 1898 about 16,000 tons of paper, worth $1,600,000. It manufactures the following kinds of paper: Drawing, letter, flat, bond, lithograph, news, poster, blotting, cigarette, envelope paper, and all kinds of cardboard excepting strawboard.

Water and steam power is used in this mill to the extent of about 3,000 horsepower. During the wet season, water supplies nearly all the power, and during the dry season steam is used. The most improved machinery is employed, and the output in general is of a good quality, considering the price asked. The company is progressive and will doubtless continue to increase its production. The output is almost entirely machine-made paper.

WAGES.

The compensation of paper-mill employees is as follows, per diem: Under 14 years, 10 to 30 cents; from 14 to 16 years, 13 to 50 cents; over 16 years, 20 cents to $1. The laborers in this country are far from being as efficient as those in the United States. In many lines, it takes two men to fill the place of one active, educated American workman.

IMPORTS.

The finer grades of linen, satin, and bond papers come from France, but are not very extensively used. The best grades of book, lithograph, and cover papers come from Germany. Nearly all the finer stationery comes from England.

Germany, France, and England, and especially Germany, are pushing hard for business in this country. They send many traveling salesmen, furnish samples, and establish branch houses and depots. The paper houses of the countries named provide neatly prepared free samples of various kinds and grades of their products, with prices. I can see no opening in this consular district for the cheaper kinds and grades of paper, but there is an opening for the better grades of linen, bond, lithograph, book, and glazed papers, and wedding and ball stationery, if properly pushed.

The United States should, as far as possible, establish agencies or depots in the more important cities, where everything of American production for which a market could be found here should be kept, so that the retailer might be able to secure a supply on short notice.

EXPORTS.

It is impossible to obtain statistics regarding the quantity and cost of paper exported to the different countries from this consulate, but I will give them for the entire country for 1897. The price fixed by the Government in settling the value of exports and imports is about 1.4 cents per pound for cardboard and about 4.5 cents per pound for all other papers, excepting wall paper.

Country.	Cardboard.		All paper, excepting wall paper	
	Weight	Value.	Weight.	Value.
	Pounds.		*Pounds.*	
Argentine Republic	1,397,231	$19,055.20	1,497,179	$63,970.40
Austria	215,862	2,943.60	1,286,630	154,974.20
Brazil	88,902	1,212.20	4,167,684	178,073.80
Chile			417,388	15,953.80
China			791,711	33,827.60
Denmark			334,796	14,578.60
France	199,775	2,724.20	3,589,830	153,383.60
Germany	23,762	320.00	3,592,302	153,489.80
Great Britain	2,736,638	37,317.60	33,162,331	1,407,964.80
Greece			394,706	16,864.80
Holland	124,427	1,696.80	12,837,048	548,492.00
Italy			52,030	2,223.20
Japan			1,359,798	58,100.40
Mexico			241,984	10,339.40
Norway			1,726,562	37,771.20
Peru			145,354	6,216.60
Portugal			32,830	1,402.80
Russia			71,214	3,082.80
Sweden			151,362	6,467.20
Spain	137,733	1,878.20	380,681	16,265.40
Switzerland			199,975	8,544.40
Turkey	609,551	8,312.00	1,789,893	76,477.20
United States			1,127,310	48,167.00
Uruguay			125,352	5,351.80
Other countries	417,557	5,694.00	375,876	16,060.60

BANK, MAIL, AND TELEGRAPHIC FACILITIES.

The banking facilities with the countries mentioned are very complete and the rates of exchange small.

The mail facilities are excellent, requiring only a few hours to reach almost any part of the countries mentioned.

The telegraphic facilities are complete, with a rate much less than in the United States, being only 10 cents for fifteen words to any part of this country, 27 cents for a message of ten words to any part of France and Germany, and 20 cents to all parts of Holland.

DUTY.

The duty on all kinds of paper and cardboard, excepting wall paper, is 4 francs per 100 kilograms (0.0035 cent per pound).

TERMS OF SALES.

The terms of sale are quite liberal. One month is considered cash, and 2 per cent discount is allowed, and three months net. In each case, the time begins with the first of the following month.

ALFRED A. WINSLOW,
Consul.

LIEGE, *January 27, 1899.*

DENMARK.

The De forenede Papirfabrikker (*i. e.*, the United Paper Manufacturers, Limited), Copenhagen, controls the manufacture of paper in Denmark. The capital is 3,500,000 kroner ($938,000), in shares. The shareholders get about 6 per cent dividend, which must be considered low, as the paper trade is a kind of monopoly, owing to prohibitive duties; but it is stated that the factories are old and machinery antiquated. They are now, however, concentrating the works and purchasing new machinery. One factory was sold last summer and will cease running on the 1st of July, 1899. The export of Danish paper is very small. In 1897, it was $254,056. On the other hand, the import into Denmark—mostly from Sweden, Germany, and Great Britain—was $838,254.

Most of the paper imported pays a duty of 4 cents per pound. Coarse wrapping paper pays one-fourth of a cent only.

The population of Denmark was, in 1890, 2,299,564. The percentage of illiterates is very small, school education being compulsory.

The use of paper is the same in Denmark as in any other European country. News paper, wrapping, book, writing, and ledger papers are used. Terms of sale, one year credit to publishers; three months to others.

The whole of Denmark consumes about 6,500,000 kroner ($1,742,000) of paper, of which about half comes from abroad. It is impossible to state each class, but it is divided about evenly between news, book, writing, and wrapping.

The principal importer is P. Malling, 26 Skindergade, Copenhagen.

There are about 300 daily, weekly, and monthly publications. In Copenhagen, there are some 150 printers and 20 publishers. In Denmark, there are about 375 bookbinders, 7 envelope manufacturers, 5 wall-paper manufacturers, and 23 paper-bag manufacturers.

The consumption is likely to increase considerably.

Germany, Sweden and Norway, Great Britain, and Belgium export paper to Denmark. Small lots also come from the United States.

The Danish factories are close to railroads, and the facilities for transportation are good.

Paper machinery is not made in Denmark.

Wages run from 70 cents to $1 daily.

The factories use steam as motive power, and the paper is machine made.

The import consists mostly of writing, ledger, finer grades book printing, cellulose, and common wrapping paper; also, surface colored and coated paper. Germany sends all grades; England, book printing; Norway and Sweden, cellulose and common wrapping paper.

The banking facilities are excellent. The principal banks are Privatbanken, Landmandsbanken, and Handelsbanken. Mail facilities are also good.

The duty is considered prohibitive, but with the labor-saving machinery in use in the United States, we should be able to compete. There are no export duties.

The paper is transported from the Danish factories to their customers by rail. It is, I regret to say, impossible to reply to the questions propounded under schedule for transportation.

Denmark used to export large quantities of rags to the United States, but the shipments have fallen off considerably. The reason is the unsatisfactory price offered, as the rags can be sold to the Danish factories at better prices.

JULES BLOM,

COPENHAGEN, *January 16, 1899.* *Vice and Deputy Consul.*

FRANCE.

LIMOGES.

PRODUCTION.

The number of manufacturers of paper in this consular district is 53, and the factories are situated in the following cities:

Department of the Haute-Vienne.—St. Julien (straw paper, 3,500,000 kilograms=7,716,100 pounds per annum, valued at 2,500,000 francs=$482,500), Bosnie, Nantiat, St. Léonard, Rochechouart, Isle, Maureix, Aixe, St. Priest, Taurion, St. Brice, Chateunaneuf-le-Forêt—straw paper. There was a large factory for letter paper in Limoges, but the competition with Angoulême was too sharp, and it now manufactures wall paper.

Department of La Corrèze.—Laguenne, Le Prieur, Malemort, Laumeuil, Tulle, and Uzèrche.

Department of the Dordogne.—Allemans, De Couze, Creysse—bristol board for fine cards; Excideuil, Lalinde, Mauroux, Montpont, Namthiat, Paysac—straw paper; Pluviers, St. Paul-de-Lizonne—paper and vegetable parchment; Thiviers, paper. These factories, altogether, have an annual output of 1,150,000 francs ($221,950).

Department Puy-de-Dôme.—Thiers (several factories), for stamp paper; Chamalières and Ambert, fine paper for prints and engravings, 450 hands employed; La Forie, Blanzat, St. Amant-Tallende—white paper, 1,741,200 francs ($336,052) per annum.

Department of Nièvre.—Corvol-l'Orgeuilleux, letter paper, 195 hands.

Department of Indre.—Le Blanc, large firm of publishers; Issoudun and Levroux, manufacturers of parchment paper.

Department of Vienne.—Bonneuil-Matours, Iteil, and Vouneuil-sous-Biard, factories of letter paper.

City of Limoges.—E. Ardant & Cie., rue de la Terasse; Marc Barbou, rue du Canard; Brègeras & Segue, rue Manigne, 18; Chas. Lavauzelle, 46 Av. Baudin; Depert, Faubourg Manigne, 24; Dethias, 4 Cours Bugeaud; Ducourtieux, 7 rue des Arènes; Dulac, 20 Faubourg de Paris; Mazaubrun & Cie., 18 rue Turgot; Nourry Vve., 4 rue Mont-à-Regret; Plainemaison, 17 bis rue Manigne; Ratier, boulevard Louis Blanc, 17; Tarneaud, 7 rue Pont Herrison.

Nearly all these persons are publishers and printers. Some of the houses have been established for many centuries. Printing is done in all the newspaper shops, especially in the small cities of the Departments.

The British manufacturers sell quite a large quantity of letter paper in France, and, as they make it more cheaply than the French, they can hold their own very easily against the native producers.

The water power of the several rivers in these Departments is not fully developed, although there are many factories situated along their banks. The machinery used in these paper factories is generally made in France, but no factories are run on the same plan as those in the United States. There is a factory in the Department of the Charente that belongs to an American (that Department is not in this consular district) which is worked on the American system. This is the only one in this part of France.

WAGES.

The wages are usually paid by the month, and they range from 90 francs ($17.37) for a foreman of the machines to 50 francs ($9.65) for ordinary workmen. Women are employed to sort the paper and are paid by the piece; they can earn from 1.25 to 1.50 francs (24.1 to 28.9 cents) per diem. Very few children are given work, except to oil the machines or as receivers of the sheets of paper as they fall from the machines; they are paid about 75 centimes (14.4 cents) a day.

BANK, MAIL, AND TRANSPORT FACILITIES.

The banking facilities are excellent in these Departments, the Comptoir d'Escompte, the Crèdit Lyonnais, and the Banque de France having correspondents in all countries.

The mailing and telegraphic communications are also good.

The greater portion of the paper manufactured in this consular district is consumed in France.

The usual method of transportation of these products from the mills to the consumer is by rail. The railroad charges per 1,000 kilograms (2,204.6 pounds) are 33.50 francs ($6.47) for less than 500 kilometers (310.7 miles).

A. JOUHANNAUD,
Vice-Commercial Agent.

LIMOGES, *May 9, 1899.*

LYONS.

CONSUMPTION.

Paper is used here for all purposes for which it can be used elsewhere. The silk industry consumes a large quantity of paper for wrapping packages.

The terms of sale depend entirely upon the reputation of the buyer. If he is known to be reliable, from three to five months' time is given for payment. If not, he is made to pay in advance. This is the answer I received from the largest paper dealers in Lyons.

There are 13 wholesale paper dealers in this city. The principal ones are: Alibaux Verilhac, rue Molière 78; A. Bavosat, Grande rue de la Guillotière 16; J. Billion, rue de l'Arbre-Sec 13; A. Bouchard, rue Mercière 30; J. Manhes, 8 rue de Conde. Their relative importance is in the order named.

Twenty different printing offices are reported in the directory of Lyons. I am unable to learn the number of printers.

Only French people, with one exception, are engaged in the paper business here.

There are 117 publications—daily, weekly, and monthly; political, artistic, dramatic, social, economic, religious, agricultural, etc. There are 13 dailies.

The consumption of paper, I am told by dealers who wish to hold their market, seems to be almost stationary.

PRODUCTION.

There are 120 paper mills within a radius of 125 miles of this city.

The water power of the country is pretty fully developed. It is impossible to estimate the amount of undeveloped water power. It is in proximity to railroads, and is chiefly in the Departments of the Isère and Savoy.

The principal fuel used is coal.

In the Departments of the Isère and Ardeche, both wood and rags are used in making paper. Rags are more plentiful than wood. Some alfa is used.

The price of wood pulp varies from 10 to 12 francs ($1.93 to $2.32) per 100 kilograms (220.46 pounds); pâte de boise chimique (chemically prepared wood), from 22 to 25 francs ($4.25 to $4.83) per 100 kilograms; rags, from 4 to 12 francs (77 cents to $2.32) per 100 kilograms; the best quality, from 35 to 50 francs ($6.76 to $9.65) per 100 kilograms.

Paper-making machinery is manufactured at Vienne, near this city. The facilities for its production are said to be exceptionally good.

The average pay of labor in paper mills is from 50 to 60 cents per day.

The mills in this region produce about 6,000 pounds of paper per day, or an average of 1,000,000 pounds per year, omitting fête days. They are all run by turbine wheels propelled by water.

Very little handmade paper is produced here, and that only in Auvergne.

The methods of manufacture are said to be modern. It would require an expert to determine this question. The methods are improving, and the production is likely to increase.

FOREIGN TRADE.

The imports of paper are insignificant and only from Sweden and Norway.

The tariff on paper is 12 francs ($2.32) per 100 kilograms; 8 francs ($1.54) from Sweden, a country to which the minimum tariff rate is applied.

I can not learn that any country is striving to build up a paper trade with France. The only way to establish a market for American paper in this country is to make it cheap and send it direct from an American to a French port, without paying profits to middlemen or losing time by warehousing and transshipment. Frenchmen all want to deal directly with the American producer. They are not certain that someone else is not making most of the profits, unless they buy direct. The French are averse to telling me what they pay for paper or anything else. They say it is unpatriotic to help build up the trade of a competitor, who may throw their countrymen out of work. In regard to canned meats, fruits, staves, shooks, and many other articles, their answer to inquiries is: "Tell me the prices for which you will sell, and then we may give your people an order."

An American importing firm is about to open in Lyons, and would cheerfully take charge of the interests of our paper makers in this vicinity.

JOHN C. COVERT,
Consul.

LYONS, *January 11, 1899.*

PROPOSED LAW GOVERNING PAPER MAKING IN FRANCE.

I inclose translation of parts of a document brought to the attention of the French Government on the 24th instant concerning the manufacture of paper. . It is proposed, as will be seen from the draft of the law given below, to establish a bureau which will practically place that industry under Government control. It obliges all manufacturers of paper to place evidence in the paper itself of its quality and origin. The objects of this act, as stated by its sponsors (seven members of the Chamber of Deputies), is "to preserve from destruction our literary works and archives, and to protect the paper industry."

The authors of the measure make a long statement, from which I translate and abridge the following:

> The greater part of the material entering into the manufacture of the paper used by our Government and in private establishments changes with time, and if we are not careful, in a century our printed works and our archives will have almost disappeared, because pure rag paper (papier de pur chiffon) is becoming more and more scarce; mixtures of alfa, pulp, etc., produce a quality of paper that time turns yellow and becomes brittle.

After citing the methods by which the presence of extraneous substances can be detected in paper, the statement continues:

> All who are engaged in the different industries involved in the production of a book have for some time noticed the bad quality of the paper now being produced. A number of governments have adopted legislative measures for the protection of its manufacture. The poor quality of paper has been pointed out by the chemists and savants of different countries. The principal reasons for this state of things are:
>
> (1) The excessive use of substitutes in the manufacture of paper.
> (2) The habit of giving attention only to external appearance.
> (3) The growing competition among manufacturers.
>
> It is just to remark that, considering the enormous consumption of paper, the materials originally entering into its manufacture—linen rags, cotton, hemp, etc.—can not now be had in quantities sufficient for the demand. Manufacturers were therefore compelled to procure substitutes.
>
> Unfortunately, as the fibers of those substitutes are shorter, they do not possess the powers of resistance of the materials formerly employed. The best substitutes now in use are the different forms of cellulose, derived from wood, straw, and alfa,

which are subjected to cold maceration or to an active bath in water mingled with some chemical agency. Paper is also made of wood shavings, to which plaster, koalin, and ashes are added for the purpose of concealing the impurities and the defects of fabrication. An increase of weight is distributed throughout the paper. Moreover, paper which contains a large proportion of wood pulp quickly turns yellow under the influence of light and heat.

Professor Martens, director of the experimental institute of Charlottenburg, was recently directed by the German Government to make scientific examinations of the quality of the different kinds of paper employed in the State and private printing houses. He caused to be sent him one hundred strips of paper taken out of the different reviews and works printed for the State. Of the slips examined by him, he found that the printing would remain legible for years upon only six. The paper from which the strips were taken was made of rags. Twenty-five per cent of the cellulose contained but very little wood pulp and a maximum of 8 per cent of ashes. The greater number of the slips—that is to say, sixty-two—contained a large proportion of wood pulp, ashes, plaster, etc.

The professor concluded that the works printed upon that paper would be illegible in forty or fifty years.

The master printers of France and the Association of Paper Manufacturers, in which are represented the heads of printing houses and lithographic and engraving establishments, favor the creation of such a bureau as the one in question. M. Fortin, president of the Central Union of Paper Manufacturers of France, read an argument in favor of the proposition which would fill about seven pages of the Congressional Record. He favored the fixing of a special "type" or quality of paper to be made for the Government and bear a mark showing State control. The advantages to be derived by manufacturers would be the certainty of having good work appreciated, a simplification in methods of testing the qualities of products, guaranty of honest competition, and greater steadiness in prices.

He believed that the public would use stamped or controlled paper in larger quantities because they would be sure of its good quality; that it would meet with a large demand in foreign countries on account of its well-established character. French jewelry, he says, is popular abroad on account of being made under Government control. Inspected paper will be in demand by publishing houses for editions de luxe and other works. In Government offices stocks of paper, regularly numbered, will be constantly on hand, and an official will choose a number according to the importance of the document to be transcribed or printed.

M. Fortin stated that all the professions represented in the syndicate for which he spoke had been injured by the application of new methods of manufacture, mechanical and chemical. The facility of obtaining almost unlimited quantities of raw material, prepared for use at a relatively insignificant price, has caused production to far outstrip the constantly increasing demand for paper. He quoted the Moniteur de la Papeterie Française, Le Bulletin des Papiers en Gros, Le Bulletin de la Papeterie, and other papers, declaring the impossibility of limiting production or of controlling the quality of paper at present. He also quoted a number of scientific writers, who stated the impossibility of maintaining durable records. He quoted the Moniteur de la Papeterie Française as asserting the inability of "a man of the trade, even experienced," in many cases, to determine the quality of paper or to estimate its cost by tearing and examining it. In conclusion, he read the following project of law:

> ARTICLE I. There is hereby created, in connection with the Chamber of Commerce of Paris, a bureau of control of paper, destined for the preservation of public or private documents.
>
> ART. II. No paper can be offered for sale unless it is supervised and bears in its paste a precise indication of its composition and place of origin.

JOHN C. COVERT,
Consul.

LYONS, *December 27, 1898.*

MARSEILLES.

The questions propounded can not be answered satisfactorily from Marseilles, for the reason that there is no local paper industry, and the price of paper is not even quoted in the market journals. The population of the city is 447,344, with a large percentage of illiterates. The local consumption of paper is probably not greater than that of any other community of the same size, as there are no industries requiring it in unusual quantities. As the principal seaport of France, the amount of declared exports of paper is, of course, large. In 1897, the imports amounted to 6,992 metric quintals (1,541,456 pounds), and the exportations for the same year were 99,280 metric quintals (21,887,269 pounds). The exports from Marseilles to the United States, expressed in their declared value, have been as follows, for fiscal years ending June 30:

1898	$19,198.46
1897	30,728.75
1896	28,518.85

The papers exported to the United States include thin oiled paper, material for photography, flat-book papers, pebble paper, colored cover papers, in various weights and sizes. The papers exported through this consulate all originate in the Department of Ardèche, and are generally from the city of Annonay. To procure exact information concerning production and consumption would be obviously impossible without visiting that place. I have been able to learn that in that Department there are 22 important establishments engaged in the manufacture of paper. The mills in the canton of Annonay, known under the names of the establishments of Vidalon, Pupil, Faya, Marmaty, Saint-Marcel-les-Annonay, Grosberty, and Pont-de-la-Pierre, manufacture every year 3,500,000 kilograms (7,716,100 pounds) of all sorts of paper, representing a value of about $974,650. The motive force employed amounts to 2,910 horsepower, and the number of employees is about 2,664. The Pont-d'Aubanas mill and the "Papeterie Verny," at Malpas, produce annually 1,400,000 kilograms (3,086,440 pounds) of paper, worth $202,650, and the straw-paper mill at Nieigles gives work to 2,000 operatives and produces stock worth $1,158,000 annually.

My correspondents at Annonay write that as their mill uses only rag stock of domestic origin, they can say nothing as to the possibility of an opening for American pulp in that market. They suggest that as the headquarters of the syndicate is 117 boulevard St. Germain, Paris, information can be obtained there more readily than of any particular Annonay manufacturer, as at Paris every branch of the subject may be inquired into. The operatives at Annonay are paid 2.50 to 4 francs (48 to 77 cents) per day. My informants are Johannot & Co. They also advise reference to the Annuaire de la Papeterie Universelle, published by Picard, 82 rue Bonaparte, Paris. This work is said to contain all facts of any importance respecting the paper trade.

The freight rate between Annonay and Marseilles on paper is 36.50 francs ($7.04) per 1,000 kilograms (2,204.6 pounds). The rate by shipping in carload lots of at least 5,000 kilograms (11,023 pounds) is 25.15 francs ($4.85) per 1,000 kilograms. Rates are not quoted on pulp or other raw materials. In spite of the vast amount of business transacted at Marseilles, the land traffic is all carried by one railway company.

As I stated in the beginning, it is impossible to answer categorically all the questions asked in the Department's circular, as Marseilles is not especially interested in the paper trade, and the one point in the district that is interested lies a day's journey from this city.

ROBERT P. SKINNER,
Consul.

MARSEILLES, *January 14, 1899.*

NICE.

POPULATION.

The population of the city of Nice, according to the latest census (1896), was 108,227. I should say that it reaches to-day the figure of 111,000. The percentage of illiterates is not procurable in the local statistics, but it may be from 8 to 10 per cent. It should be remembered, however, that there is a considerable floating population, especially among the laboring and working classes. I consider that the people have the mechanical traits necessary to become producers of paper.

CONSUMPTION.

The uses of paper may be said to be confined to local printing, wrapping, and wall papering. There are no industries peculiar to the country requiring this product. At present, with the exception of wall papers, only inferior qualities are used here, and I know of no special requirements as to quality, weights, sizes, etc. I find that paper for printing newspapers ranges from 35 to 75 francs ($6.75 to $14.49), and for wrapping from 20 to 25 francs ($3.86 to $4.83) per 100 kilograms (220.46 pounds). There are several qualities of finer papers, used by printers for miscellaneous printing and fine work, that cost from 85 to 110 francs ($16.40 to $21.23) per 100 kilograms (220.46 pounds).

I can not ascertain that there are any uniform terms of sale, the credits varying according to the commercial status of buyers. There are few heavy purchasers, and for these special terms are made, generally at three months. Our system of discounts is unknown here. It is impossible to ascertain the statistics relating to the quantities and values of paper consumed during any given period. There are no paper companies or brokers. One firm, manufacturing cheap paper, is located at Pont de Peilles. The name of this firm is Chagot & Bounet. The wholesale dealers in paper are: Madame Broggi, 17 rue Pastorelli, and Madame Rossi, 17 rue Emmanuel Philibert, Nice.

There are 5 daily newspapers published at Nice, 1 at Monaco, 1 semiweekly at Nice, 1 monthly at Nice, and 26 weeklies in the Department of the Alpes-Maritimes. These are likely to change in number each season. There are about 20 printers of different classes at Nice, but there are no publishers as the term is understood in the United States. Aside from these, there are the usual consumers of wrapping, writing, stationery, and wall paper. There are, moreover, no special articles manufactured from paper or from pulp. The consumption of paper is certainly likely to increase with the population, and I should judge that if good papers, at reasonable prices, were to be found here (such as are manufactured by the large American manufacturers) a very considerable trade might be done. Up to the present time, French manufacturers dominate the paper trade. There is a certain amount of fine stationery imported from England, but almost, if not entirely, through second hands.

PRODUCTION, FUEL, LABOR, ETC.

I am certain that there is a considerable amount of undeveloped water power in the Department of the Alpes-Maritimes, but generally at good distances from railway communication (there are no navigable streams), from markets, and from sources of materials for paper. A company (see my report in Commercial Relations, 1898, Vol. II) is developing water power on the Var, and expects to have about 5,000 horsepower. In large towns, the fuel used is English coal, costing here about $8 per ton. The only facilities for transportation are the two railways. Wood is burned in the smaller towns and in the villages. There are no special materials used for paper making, and I am informed that what pulp is used by the firm at Pont de Peille, mentioned above, is imported from the neighborhood of Genoa.

There are no manufacturers of paper machinery. There is a firm of machine makers that could manufacture such if required, but at much higher price, of course, than such machinery could be laid down from the United States.

Labor in the paper mill mentioned above is paid for at the rate of 2.50 to 6 francs (48.25 cents to $1.158) per day.

The quantity and value of paper produced can not be ascertained, but I can state that the quantity produced is but a small proportion of that consumed.

In this mill water power is used, and hand and machine made paper is manufactured. The processess and methods are not modern, and the production is not likely to increase.

IMPORTS AND EXPORTS.

The paper imported consists almost entirely of writing paper and stationery from England, with small quantities of paper hangings. For these, no market price can be mentioned, as they come through second and even third hands in Paris, Lyons, or Marseilles.

The banking facilities with all countries are of the best, as there are several large banks and bankers competing for exchange.

DUTY.*

The import duties are as follows, per 100 kilograms (220.46 pounds):

Articles.	Duty.	
	Francs.	
Machine-made paper	13	$2.509
Hand-made paper, rough edges	15	2.895
Fancy papers:		
White or colored	36	6.948
Covered with metal in leaf or metallic powder	72	13.896
Paper hangings	13	2.509
Sulphurated paper	25	4.825
Photographic paper:		
Nonsensitive	125	24.125
Sensitive	225	43.425
Cardboard (rough) in sheets and weighing not less than 350 grams per square meter	13	2.509
Papier-maché	12	2.316
Cardboard:		
Cut or prepared	19	3.667
Cut and in boxes	45	8.685
Tubes	25	4.825
Decorated or painted	90	17.37

As there are no direct importations, no statistics on this subject exist. What is imported, however, comes from England.

There are no exports of paper from Nice.

TRANSPORTATION.

Mail and telegraphic facilities are very good.

The freight rates from Lyons to Nice are, for paper, 52.10 francs ($10.055) per ton and 38 francs ($7.334) in carloads. I mention the rate from Lyons, as the greater part of the paper used here comes from that neighborhood. It should be remarked in this connection that, so far as I am able to ascertain, the freight for paper from New York to Marseilles ought not to be more than 35 to 40 francs ($6.75 to $7.72) per ton.

GENERAL REMARKS.

After having made several inquiries, I should say that it would not be difficult to inaugurate a trade in American paper. In such case, it would be necessary to forward a complete series of samples to a commission house, with prices and quotations of freight rates from New York to Marseilles. At the moment of completing this report I am informed that the Société des Forces Motrices (see my report in Commercial Relations before referred to) is considering a project for building a paper-pulp manufactory.

After careful inquiry, I find that other consulates here do nothing toward increasing the exports from their respective countries to Nice. This consulate makes up and forwards, I should say, from twenty-five to thirty reports for every one sent by any other consulate, without counting the replies on numerous subjects to many commercial inquiries from the United States.

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*See SPECIAL CONSULAR REPORTS Tariffs in Foreign Countries, part 1, page 164, for full details showing duties on paper imported into France.

HAROLD S. VAN BUREN,
Consul.

NICE, *January 27, 1899.*

ROUBAIX.

The population of the consular district of Roubaix is estimated at about 2,000,000 inhabitants. Ten per cent (mainly old people) are illiterates.

PRODUCTION, PRICES, ETC.

As there are but six paper mills in the consular district of Roubaix (Department of the North), it is not considered an important paper-making district. The principal paper produced here is packing and a little parchment. Writing and printing papers come from the Pas de Calais, the suburbs of Paris, from Angoulême, Rives (Isère), Grenoble, Annonay, Essounes, and in the Department of the Vosges.

The people have decided mechanical tendencies, and their natural aptitude is cultivated by technical schools.

The Department of the North is the most important manufacturing district in France, and ranks in wealth and political importance next after the Department of the Seine.

In addition to the usual uses for journals, books, and circulars, large quantities of paper are required for the chief industries of the district—the manufacture of dress goods, spinning, and weaving.

Cardboard is consumed in large quantities for pattern making, boxes, and tubes for spinning mills and heavy-weight paper for packing dress goods.

Table showing size, weight, and price of printing paper.

Technical name.	Size of paper.		Weight per ream (500 sheets).
	Centimeters.	*Inches.*	*Kilograms.**
Procureur	26 by 35	10.3 by 13.7	2
Pot	31 by 40	12.2 by 15.7	2.5
Telliere	34 by 44	13.3 by 17.3	3
Couronne	36 by 46	14.1 by 18.1	3.5
Ecu	40 by 52	15.7 by 20.4	4.25
La coquille	44 by 56	17.3 by 22	4.5
Rasin	50 by 65	19.6 by 25.5	6.5
Jesus	56 by 76	22 by 29.9	8.5
Colombier	63 by 90	24.8 by 35.4	10
Grande aigle	73 by 105	28.7 by 41.3	11.5

* 1 kilogram=2.2046 pounds.

The price varies from 50 to 120 francs ($9.65 to $23.16) per 100 kilograms.

Wall paper is sold always in rolls of 10 meters (10.9 yards).

The sizes of packing paper are 65 by 100 centimeters (25.5 by 39.3 inches), 70 by 105 centimeters (27.5 by 41.3 inches), 75 by 110 centimeters (29.5 by 43.3 inches), 80 by 115 centimeters (31.4 by 45.2 inches), 85 by 120 centimeters (33.4 by 47.3 inches), 90 by 125 centimeters (35.4 by 49.3 inches), 100 by 120 centimeters (39.3 by 47.3 inches), 105 by 135 centimeters (41.4 by 53.1 inches), 110 by 140 centimeters (43.3 by 55.1 inches), 120 by 150 centimeters (47.3 by 59 inches. These are the usual sizes used for packing, in double or single sheets; same width in rolls.

Prices vary from 20 to 60 francs ($3.86 to $11.58) per 100 kilograms (220.46 pounds) according to whether the paper is glazed or not. Packing paper is always sold by weight. Usual terms of sale are sixty and ninety days.

I have not been able to ascertain the quantity or value of paper consumed for the year.

There are 6 firms manufacturing paper and 42 brokers.

The following is a list of the principal manufacturers:

De Naeyer & Co., Prouvy, Nord.
Bourguignon & Co., Anor, Nord.
Derresaw-Dejardin, Hallum, Nord.
A. Gombert & Soeurs, Hallum, Nord.
A. Verkindère-Mayer, Hallum, Nord.
Dalle frères & Lecomte, Bousbecque, Nord.

The number of publications in this consular district is 91; printers, 142; publishers, 71.

Boxes, cardboard, tubes, and wrapping paper are manufactured from pulp.

The tendency is to increase production.

France dominates the paper trade; England follows in importance, then Germany.

Coal is used as fuel, the cost to manufacturer being 10 to 11 francs ($1.93 to $2.12) per 1,000 kilograms (2,204.46 pounds). Transport is by rail.

Raw materials for paper making are straw, rags, waste paper, textile waste, and pulp, imported in small quantities from Norway.

Textile waste exists in such large quantities that a great deal is exported.

The cost to paper manufacturers of old rags, bagging, etc., is about 70 francs ($13.51) per 1,000 kilograms. Textile wastes and rope command 170 francs ($30.88) per 1,000 kilograms.

The cost of labor is from 1.50 to 3 francs (29 to 58 cents) per day. Workmen produce much less rapidly than in America.

No statistics are available as to quantities and values of paper of each kind produced each year for the last five years.

There are six paper mills. Manufacturers will not furnish information concerning their output. The following is a table of the number of paper mills in France:

Description.	Mills.	Engines.	Horse-power.
Paper making	403	60	21,471
Wall paper	25	29	441
Cardboard	113	120	1,651
Printing and lithographic paper	676	733	6,731

Steam power only is used in this district, no water power being employed. Methods are modern, and paper is machine made. There is still a small quantity of handmade parchment produced.

IMPORTS.

Writing, packing, parchment, and fancy papers are imported.

In every case where I have made inquiry for market price of different styles of paper, I have been told that there was no price current; that if I would indicate the exact paper I desired, samples would be furnished.

Imports into France from different countries.

Country.	Quantity.*	Value.	
	Kilograms.	*Francs.*	
Russia	43,560	81,868	$15,801
England	4,790,355	5,908,029	1,140,250
Germany	3,604,447	11,022,376	2,127,319
Belgium	2,577,731	5,909,620	1,140,557
Holland	80,576	263,864	50,926
Switzerland	421,243	1,627,283	324,066
Austria	155,582	356,348	68,775
Spain	253,433	656,063	126,620
Portugal	2,548	18,267	3,526
Italy	418,906	1,361,417	262,753
Sweden	59,383	39,170	7,560

* 1 kilogram = 2.2046 pounds.

Imports into this consular district.

To—	Quantity.	Value.	
	Kilograms.	*Francs.*	
Lille	840,300	2,677,700	$516,796
Valenciennes	89,700	307,200	59,290
Tourcoing	95,200	438,000	84,534
Dunkirk	202,200	167,500	32,328
Total	1,027,400	3,590,400	692,948

COMMUNICATION AND BANKING.

Financial connections and banking facilities, also mail and telegraphic communications, are good.

State mail and telegraphic facilities are good, this district being six to ten hours' journey from both England and Germany.

The only practical manner of building up an import business to this country in any line is to send competent agents speaking the French language, with samples of the articles they desire to introduce. Interest can be awakened only by personal solicitation. The Germans understand this, and are extending their market rapidly.

EXPORTS.

Packing, writing, printing, and wall papers are exported.

Exports from France to different countries.

Country.	Quantity.	Value.	
	Kilograms.	*Francs.*	
Russia	174,132	192,597	$37,171
England	3,603,616	7,574,737	1,461,924
Germany	1,885,768	4,863,817	938,717
Belgium	4,081,749	13,328,189	2,572,340
Holland	159,670	543,877	104,968
Switzerland	1,380,137	2,949,224	569,200
Austria	253,309	1,033,518	199,469
Spain	1,159,930	2,052,341	396,102
Portugal	223,794	409,637	79,060
Italy	423,479	982,382	189,600
Sweden	17,888	40,160	7,751
Greece	269,673	193,654	37,375

Exports from this consular district.

From—	Quantity.	Value.	
	Kilograms.	*Francs.*	
Roubaix	23,500	31,200	$6,022
Lille	62,000	261,500	50,470
Valenciennes	94,800	257,600	49,717
Tourcoing	125,000	293,700	56,684
Dunkirk	146,200	120,700	23,295
Total	451,500	964,700	186,188

These statistics are taken from the report of the custom-house authorities.

LIST OF PUBLICATIONS.

La Papeterie (nineteenth year); Ch. Lhomme; 9 rue Lagrange, Paris.

Bulletin and Journal des Fabricants de Papier; 18 rue des Pyramides, Paris.

Journal des Papetiers and Imprimeurs; 20 rue Turgot, Paris.

Moniteur de la Papeterie Française; Monsieur A. Person du Bief; 6 rue du Pont de Lodi, Paris.

W. P. ATWELL,
Commercial Agent.

ROUBAIX, *December 17, 1898.*

GERMANY.

Among the industries of the Empire, paper making occupies a very important position. As rags and paper-making materials began to grow scarce in the years before 1846, F. G. Keller, a citizen of Saxony, discovered a method of making paper from wood pulp. In 1860, Alwin Rudel erected the first mill that put cellulose, or wood pulp, on the world's market.

FACTORIES AND WORKMEN.

In 1882, Germany had 16,665 concerns engaged in the production of paper. Of these, 15,814 were principally employed in this line, and 851 used it as branches of other industries. The persons employed in that year in these concerns numbered 100,156. In 1895, there were 18,709 concerns, 17,631 of which made paper, pasteboard, etc., alone, and 1,078 made these products in connection with other lines. The 18,709 concerns had 152,909 persons employed in the manufacture of paper. This indicates an actual gain of 2,044 concerns, or an increase of 12.2 per cent, and a gain of 52,723 laborers, or 52.7 per cent. These numbers include only those persons employed directly in the production of paper. Counting those indirectly employed, the Empire has fully 200,000. Directly dependent on the paper industry are 127,867 persons employed (in 1895) in the polygraphic industries.

There are 49,771 persons employed in bookbinding; 48,299 in making paper and papier-maché. In the bookbinding line, the individual industries are small, much of the work being done at home.

The following table tells its own tale as to the different industries and the number of persons employed:

Description.	Number of principal concerns.			Average number of persons employed.			
	Total.	Employing 5 and under.	Employing more than 5.	Total.	Concerns employing 1 person.	Concerns employing 2 to 5.	Concerns employing more than 5.
Paper and papier-maché	3,735	1,238	1,687	85,104	810	3,590	80,704
Preparing wood	562	175	387	13,981	....	597	13,384
Finishing paper, etc	1,020	165	800	48,299	55	522	47,722
Making of different kinds of paper	49	15	28	850	6	48	796
Making of hard paper and papier-maché	129	38	34	828	57	105	666
Making of tar and roof papers	207	56	151	2,785	....	186	2,599
Making of fancy papers, etc	242	38	163	11,103	41	113	10,949
Wall papers of all kinds	87	12	65	3,683	10	36	3,637
Toys from paper, etc	1,439	739	59	3,575	641	1,983	951
Bookbinding and box making	13,896	6,170	1,925	67,805	5,801	16,949	45,055
Bookbinding	12,073	5,604	1,225	49,771	5,244	15,157	29,370
Box making	1,823	566	700	18,034	557	1,792	15,685

Prussia, the Empire's most important paper-producing state, has 8,702 concerns, employing 72,250 persons. The Rhine provinces have 1,732 concerns, employing 15,957 persons.

Berlin has 1,260 concerns, with 15,900 employees; Silesia, 1,039 concerns and 11,208 persons. Further details are given below.

District.	Concerns.	Number of employees.
Saxony (Kingdom)	2,492	31,211
Baden	764	9,278
Wurttemberg	917	8,280
Saxe-Meiningen	1,229	3,008
Alsace-Lorraine	290	2,997
Hesse	365	2,310
Saxe-Coburg-Gotha	591	1,691
Anhalt	100	1,159
Hamburg	272	1,055

The remainder are rather unequally distributed over the Empire.

CONSUMPTION AND PRODUCTION.

Germany leads in Europe in the consumption of paper per capita. The following table shows the annual consumption in the years 1876–1878:

Country.	Per capita.	
	Kilograms.	*Pounds.*
Germany	6	13.2
Great Britain	5	11
France	3.6	7.9
Austria-Hungary	2.5	5.5
Russia	0.9	1.9
Italy	1.4	3.09
Belgium	5.1	11.2
Scandinavia	5	11

This is undoubtedly due, in a very great degree, to the Empire's highly developed paper-producing industries, as well as to the excellent system of compulsory education.

The latest reliable statistics on the subject of paper production refer to a period rather remote, when one remembers the progress made in the production of paper. Rudel's figures, the most reliable, are for the year 1878. They give—

	Centners.
Germany	4, 886, 000
France	2, 694, 000
Great Britain	3, 364, 000
United States	4, 270, 000
Austria-Hungary	1, 845, 000

At that time, this Empire led the world. Its present production is put down at 6,000,000 to 7,000,000 centners.

EXPORTS.

The progress of the German paper-making industries is shown by the exports. In the years 1888–1897, the yearly amount of paper exported went up from 49,063 tons to 97,190 tons, an increase of 98.1 per cent. The values rose from $14,779,800 to $17,374,000, a 17.6 per cent increase. The fact that the 97,190 tons are not proportionately equal in value to the 49,063 tons of 1888 is due to the progress in methods of production, transportation, and to the increasing competition of other exporting countries. The following table gives an idea of the kinds, amounts, etc., of paper exported:

Description.	1888.	1892.	1896.	1897.
	Tons.	*Tons.*	*Tons.*	*Tons.*
Fancy, gold, and silver paper	4,454	6,004	7,089	6,342
Packing paper, smooth and rough	5,091	19,678	32,047	30,663
Photographic paper	433	556	345	334
Writing and printing paper	27,555	36,156	45,192	39,398
Not particularly named, parchment, etc	3,768	4,058	5,771	5,914
Paper and pasteboard goods	7,762	7,915	10,297	10,646
Wall paper	....	2,392	3,379	3,893

This table is interesting, inasmuch as it indicates an important falling off in the year 1897. Every effort is made to induce manufacturers and merchants to believe that the decrease is due to an increased demand at home. The fact seems to be that other countries are beginning to manufacture for themselves. One fact found in the table is very important, indicating, as it does, an enormous export in writing and printing paper. In 1897, the imports of paper amounted to 5,007 tons, worth $1,356,600. When one compares these figures with those of the paper exports in 1897 (97,190 tons, worth $17,374,000), it will be seen that the paper industry is a very important branch of the Empire's export trade.

It will interest our paper people to know that of the Empire's exports, Europe takes a total of 49,837 tons, worth about $8,930,000, divided as follows:

Country.	Quantity.	Value.
	Tons.	
Great Britain	34,747	$4,926,600
Holland	9,719	1,642,220
Austria-Hungary	1,259	737,800
Belgium	2,445	618,800
Switzerland	834	428,400
France	602	380,800
Denmark	149	119,000
Spain	82	71,400

Asia (Japan) took 3,467 tons, worth $428,400.

America took 10,391 tons, worth $2,546,600, divided chiefly as follows:

Country.	Quantity.	Value.
	Tons.	
United States	2,560	$1,808,800
Brazil	3,768	523,600
Argentine Republic	4,063	452,200

Only countries taking upwards of $119,000 worth have been put down. Among others buying paper from the Empire are British India, Australia, Mexico, Chile, Uruguay—in fact, almost all the important South American countries. The falling off in 1897 is not believed to be an indication of a permanent loss in paper exports. Statistics for the first six months of 1898, compared with those for a like period of 1897, show an increase in the exports of papier-maché, etc., from $11,090,800 to $11,759,580. Compared with the paper exports of other countries, this Empire's position is one well worth considering. In the year 1896, the latest for which I find data, this

Empire was a long way ahead of all others in its paper exports. The following table gives the relative values:

Country.	Value.	Country.	Value.
Germany	$19,063,800	Belgium	$5,236,000
France	10,448,200	United States	2,713,200
Great Britain	7,925,000	Italy	1,904,000
Austria-Hungary	7,330,400	Switzerland	476,000

In other words, Germany has a third of the world's exports of paper. Were it not for the import duties of other countries, Germany would have a much larger share of the world's commerce in this article. It is hoped by German paper manufacturers that the imperial commissioners charged with the work of formulating new trade treaties will see to it that this important industry is remembered. In the future, as in the past, merchants and manufacturers will neglect nothing that will in any way contribute to the increase of the Empire's exports in this line; they only ask the Government to give such aid as is possible.

POPULATION AND ILLITERATES.

The population of the Empire in 1895 was 52,280,000; at present it is estimated at 55,000,000.

In the recruits of the Empire the percentage of illiterates is 2 in 1,000—against 50 in Holland, 55 in France, 708 in Russia, 1 in Sweden, 5 in Denmark, 22 in Switzerland, 144 in Belgium, 220 in Austria-Hungary, 300 in Greece, 390 in Italy, and 793 in Servia.* The people have decided mechanical traits, and the record of inventions since the establishment of the imperial patent office in 1878 is remarkable. Nor must it be forgotten that the German patent office is perhaps the hardest in the world to pass.

CREDITS, ARTICLES OF MANUFACTURE, ETC.

Sales are made for cash; thirty, sixty, and ninety day credits are also granted. Cash payments call for 4, 5, or 6 per cent discount.

Berlin, Leipzig, and Dresden are the great paper making and brokering cities. Their relative importance is perhaps in the order named, except that Leipzig, in some lines—*i. e.*, book making—is one of the world's great centers. Frankfort has the famous playing-card factory of Wust.

The uses and kinds of paper, as well as the chief articles manufactured from paper pulp, are about the same as with us, except that vast quantities of toys are made from paper and wood pulp, it being much easier to press forms out of pulp than to cut them from wood.

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*In Saxony, in 1893, of the 9,356 recruits ordered into the army, only 1 could not read and write; of the 2,386 born in other parts of the Empire, 4 could not read and write—a remarkable record.

PRODUCTION, FUEL, MACHINERY, WAGES, ETC.

For a report on Germany's water power, sent from this office, see Consular Reports No. 219, page 618.* Saxony alone has 50,000 horsepower. I am not able to obtain figures for the Empire. I may add, however, that the water ways of no part of the world are more employed in industries than are those of this Empire. The system of canalization is perhaps the most perfect on earth, and it is being constantly extended.

Coal is mostly used as fuel. It comes from Westphalia and Silesia and the so-called mineral mountains. These latter, with the Bohemian hills, furnish a brown coal. Berlin buys 1,000,000 or 2,000,000 tons annually from England. The production of hard coal is 76,750,000 tons, worth $121,380,000; of brown coal, 22,100,000 tons, worth $12,661,000.

This Empire's forests are the best cared for on earth. Twenty-five and eight-tenths per cent of the total area is wooded. Of the woodlands, 8.6 per cent are covered with oaks, elms, maples, etc., and 17.2 per cent with pine, spruce, and the like. Few grasses are used, except such as are imported. Rags and waste material are worked up, as with us, only there is not, perhaps, the same abundance of rags. Many of the raw materials—rags, grasses, and woods—are imported. The question, "What are the costs of each to the manufacturer and what are the facilities of transportation?" is hard to answer. No one will give such accurate details of his business as this question calls for. Then, too, prices differ. Factories in the seaside cities have hardly as much to pay as inland cities. The cost of transportation, while, as a rule, very reasonable, is an important item in the annual accounts. The rivers, canals, and railroads offer excellent means of transportation. The Rhine is navigable for large boats as far up as Mannheim, the Main to points far inland, the Elbe beyond Prague in Bohemia, etc. From the Memel, in the north, to the Danube, in the south, almost every water way in the Empire, canal or river, is made to aid industries, either for purposes of transportation or power.

The facilities for making paper machinery are equal to those for making other machines, labor, coal, iron, and transportation being comparatively cheap. There are 344 mills that make paper-mill machines and 501 that make paper machinery of various kinds. Some of these export.

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*Advance Sheets No. 266 (November 5, 1898).

Wages in paper mills are rather low, running from 15 to 75 cents per day. Labor, on the whole, is skillful, intelligent, and industrious, but by no means so quick or productive as ours.

Both steam and water power are used. Some of the work is done by hand, but most by machinery. One concern in the Annaberg consular district has secret processes by which it makes a filter paper that finds its way into all parts of the world, London taking large quantities.

The processes and methods of manufacture are, on the whole, modern. Certain specialties, like the filter paper referred to above, continue to be made in seemingly old-fashioned ways. Anyone, however, who thinks these people slow in trade matters will make a serious mistake. Methods necessary to hold the home and conquer foreign markets will be adopted here as quickly as with us.

BANKING, TELEGRAPH, AND MAIL FACILITIES.

Germany's financial standing is well known. Besides the Reich or Imperial Bank, a branch of which is to be found in every large city, there are innumerable private banks—from those of the Rothschilds and Bleichroeders down to the savings banks of the backwoods of Bavaria and Silesia. The rates of discount are very reasonable. The check system, for a long time unpopular, is now in a fair way to be adopted all over the Empire.

The mail facilities are among the best in the world. Bremen's North German Lloyd boats and those of the Hamburg Packet Company need only to be named to indicate how happily every exporting or importing branch of trade is provided with facilities for trade. Telegraphic communications are practically equal to our own.

IMPORT DUTIES.

The small quantity of paper imported comes mostly from Great Britain (Irish linen for fancy letter and envelope making).

Foreign countries are doing little to build up their exports to this country. The trade is all in German hands.

Duty on paper, per 100 kilograms (220.46 pounds).

Description.	Duty.	
Packing paper, printed or not printed:	*Marks.*	
(1) Rough, yellow straw paper..........gross weight...	1	$0.238
(2) Other kinds, in different colors—		
(*a*) Unpressed (rough), subject to tariff treaties..........do......	4	.952
(*b*) Pressed (smooth), subject to tariff treaties..........do......	6	1.43
Wrapping paper with cloth backing..........	24	5.71
Asbestus paper in sheets, rolls, etc.:		
Asphalt paper..........	10	2.38
Formed	24	5.71

Duty on paper, per 100 kilograms, etc.—Continued.

Description.	Duty.	
	Marks.	
Fancy paper (excepting writing, printed, blotting, silk, and drawing paper, but including dolf and silver paper)	10	$2.38
Printed paper, fancy and colored, subject to treaty	10	2.38
Gout, fly, mustard, and vesicatory paper......gross weight	1	.238
Card paper, double or more ply, parchment, and chemisen pepr. vegetable parchment	10	2.38
Blotting paper:		
Gray, common (small quantities)......gross weight	1	.238
Other kinds, including filter and colored paper	10	2.38
Smokers' paper for cigarettes, etc	100	23.80
Slate paper for blackboards and slates not mixed with other material, gross weight	1	.238
Polishing paper, sand, emery, glass, etc......gross weight	1	.238
Writing paper, including letter paper, fancy and colored	10	2.38
Drawing paper, fancy and colored	10	2.38
Silk paper, fancy and colored	310	73.78
Soap paper	30	7.14
Zunder (tinder) paper......gross weight	3	.71
Saturated paper, not noted above:		
(*a*) Albumin and other photographic paper.		
(*b*) Asthma paper, bluing paper (indigo, ultramarine, etc.) to be used in bleaching, oil copy, paraffin, etc	10	2.38
Lackmus, alkanna papers, sulspeter, wax cover on one or two sides with chalk, white lead, gelatin, or mucilage	10	2.38
(*c*) This class of paper with cloth backing	24	5.71
(*d*) With satin and other silk, velvet, or plush, or similar paper for making paper ware, toys, etc	120	28.56
(*e*) Lace-like paper, pressed for purposes of embroidery, designs, etc	10	2.38
Printing and writing paper:		
(*a*) Lithographic, printed, lined for bills, etc., envelopes, etiquettes, etc	10	2.38
(*b*) Manuscript and waste paper	Free.	....
Funnel, bag paper	12	2.86
Linen-lined funnel	24	5.71
Paper barrels	12	2.86
Paper barrels with wooden bottom and top	24	5.71
Papier-maché......gross weight	1	.238

FREIGHT RATES.

Freights are based as units, on kilograms, 100 of which equal 220.46 pounds avoirdupois. Shipments of less than 20 kilograms go as 20 kilograms, 21 kilograms count as 30 kilograms, 32 kilograms count as 40 kilograms, etc. Freight rates run high or low according to speed—*i. e.*, as fast freight, parcel or piece rates, or carloads. Carloads sent by "fast" freight pay double the ordinary carload rates. The minimum amount paid for a fast-freight letter is 50 pfennigs (11.9 cents). If this is sent by a fast-express train, with consent of railroad authorities, 1 mark (23.8 cents) must be paid. The freight rates for fast-train goods are twice what would be paid for the same quantity in weight if sent on ordinary fast-freight trains. Parcel freight includes all that does not go on the fast-freight trains.

Freight rates on wood for paper mills, to or from Hamburg (450 kilometers—279.6 miles—from Chemnitz) are 2.15 marks (51.1 cents) per 100 kilograms. Packing pulp, straw pulp, wood pulp, turf pulp, etc.; raw roof-paper pulp; all kinds of pulp for export; wood, cut, dry, and in pulp, if the plates are so cut or filled with holes that they can not be used as pulp, cost 2.15 marks (51.1 cents) per 100 kilograms (220.46 pounds) to Hamburg. In case the goods are to go out of the country via Hamburg or Bremen, shipments of less than 5,000 kilograms go at the rates put down for carloads of 5,000 kilograms (11,023 pounds). These rates, however, are not accorded to goods that come into the country. The rates to Hamburg are, for a load of 5,000 kilograms, 3.20 marks (76.1 cents) per 100 kilograms; if more than 10,000 kilograms (22,046 pounds), 2.82 marks (67.1 cents) per 100 kilograms. Fast-express rates are 10 to 30 marks ($2.38 to $7.14) per 100 kilograms; to Leipzig, 83 kilometers (51.5 miles), the special rates are 46 pfennigs (10.9 cents) per 100 kilograms; in carloads of at least 5,000 kilograms, 74 pfennigs (17.6 cents); loads of upwards of 10,000 kilograms, 62 pfennigs (14.7 cents).

Rags pay 1.71 marks (40.6 cents) unless in very large quantities, when the rates are those given for wood. Paper pays the same rates as those given for pulp, with this difference: paper, for export, no matter how small the quantities, is sent at the rates for 5,000 kilograms—3.22 marks (76.6 cents)—instead of 5.15 marks ($1.225). From Chemnitz to Einsiedel, where there is a large paper mill, the rates are 14 pfennigs (3.3 cents) per 100 kilograms on the articles enumerated, except rags, which pay 11 pfennigs (2.6 cents) per 100 kilograms. The only difference, I am told, is in favor of goods going out of the country. These exports, if in parcels, get the same rates as if they were in 5,000-kilogram blocks; goods that come in have to pay the full rates. The rates given are for land. Water rates are much less. Extra expenses are freight, customs bills, etc.; these cost only a trifle—one-fourth of a cent each. Marking the bales, boxes, etc., costs 5 pfennigs (1 cent); weighing, 5 pfennigs per 100 kilogram for parcels and 4 pfennigs (0.8 cent) per 100 kilograms for carloads, and 1 mark (23.8 cents) extra for the wagon or car.

Freight rates from Chemnitz to Bremen, by land, including cartage, are $1.03 per 100 kilograms; from Chemnitz to New York, per Atlantic Transport Line, through Brasch & Rothenstein, including land and ocean freight, $1.90; from Chemnitz to New York, through Delius & Co., Bremen, ocean freight, $3 per cubic meter (35.316 cubic feet), land freight in addition.

The Hamburg Line and the Holland-America Line charge the same rate as Louis Delius & Co.

The charge through Brasch & Rothenstein, from Chemnitz via Stettin to New York, is 6 marks ($1.48) per 100 kilograms.

Comparative estimates on goods to be shipped per the Atlantic Line from London and per German lines from Bremen and Hamburg.

Average weight per cubic meter, in kilograms.	Shipping via Bremen on the basis of $3 per cubic meter.*	Shipping per Atlantic Transport Line, $1.90 per 100 kilograms from Chemnitz to New York.	Savings on the last-mentioned route, against the charges for shipping via Bremen.
150	†$4.55	$2.85	$1.70
160	4.65	3.04	1.61
170	4.76	3.23	1.53
180	4.86	3.42	1.44
190	4.96	3.61	1.35
200	5.06	3.80	1.26
210	5.16	3.99	1.17
220	5.27	4.18	1.09
230	5.37	4.38	.99
240	5.47	4.57	.90
250	5.57	4.76	.81
260	5.68	4.95	.73

* The cubic meter varies in weight according to merchandise. It represents 180 kilograms of gloves and 250 kilograms of hoisery, for instance.

† These figures include transport from Chemnitz to Bremen, $1.03 per 100 kilograms.

Imports and exports.

Articles.	Imports.		Exports.	
	*Dble. centners.**	*Pounds.*	*Dble. centners.**	*Pounds.*
Rags	22,330	4,912,710	15,914	3,503,481
Paper shavings	72,537	15,988,353	28,758	6,330,083
Woods and other cust stuff (animal) and wooden articles	51,039,760	11,248,761,520	11,270,111	2,479,454,420
Paper and paper wares	658,641	14,463,230	2,120,525	466,515,702
Paper, half manufactured from rags	948	208,973	363	79,981
Asphalt and tar paper	9,878	2,177,493	52,540	11,579,010
Gray blotting and straw paper	4,694	1,033,921	10,489	2,307,714
Wood, stripped	129,135	28,413,712	88,996	19,612,562
Cellulose, straw, and other fibrous material	263,837	58,065,453	640,950	141,219,420
Common pasteboards	76,336	16,826,032	194,306	42,788,422
Polishing, emery, and fly paper	2,464	542,201	16,060	3,535,220
Packing paper, except rough straw paper	29,158	6,418,783	174,539	38,429,794
Polished paper and leather paper, paper shavings	1,713	377,161	14,964	3,293,501
Wrapping paper, smoothed	16,103	3,544,661	159,616	35,139,722
Photographic paper	460	101,320	3,384	745,611
Fancy, gold, and silver paper	4,300	947,100	66,327	14,614,043
Blotting paper, except gray silver	21,242	4,673,250	34,119	7,517,184
Writing paper for bills, etc	29,553	6,505,881	87,594	19,303,921
Printed paper	10,615	2,335,502	328,925	72,466,902
Drawing paper	661	145,640	5,200	1,146,000
Common paper	4,015	884,302	61,514	13,553,281
Paper and pasteboards	13,052	2,872,460	13,024	2,871,792
Forms for asphalt	27	5,943	207	45,543

* 1 double centner=220.46 pounds.

Imports and exports—Continued.

Articles.	Imports.		Exports.	
	Dble. centners.	*Pounds.*	*Dble. centners.*	*Pounds.*
Covers manufactured from kamptulikon, linoleum, etc.	17,853	3,930,981	15,358	3,380,883
Cartridges	116	25,522	1,173	258,091
Toys, paper chief article	69	15,204	7	1,543
Paper and paper goods for general use	12,212	2,686,640	109,134	24,013,491
Wall paper	5,013	1,104,861	39,058	8,606,783
Cartridges, in connection with other materials	658	144,983	1,173	258,091
Toys, in connection with other materials	83	18,291	8	1,763
Paper and paper goods for general use in connection with other materials	1,131	248,830	109,134	24,013,491
Paper and pasteboards not entirely declared	1,915	421,702	1,970	433,830

J. C. MONAGHAN,
Consul.

CHEMNITZ, *December 31, 1898.*

DRESDEN.

POPULATION.

The population of the Kingdom of Saxony, according to the last census of December 2, 1895, was 3,787,688 (1,838,422 males and 1,949,688 females), against 3,502,684 in the census of December 1, 1890; increase, 2 per cent in ten years.

Its capital, Dresden, had a population on December 2, 1895, of 334,066; two suburbs have since that date been amalgamated with the city, and its estimated population on January 1, 1899, was 389,300.

The Saxon people have decided mechanical traits, are patient and painstaking workmen, and are not slow in discovering fuel or labor saving qualities in machinery.

CONSUMPTION.

Paper is used in Saxony for printing, writing, wrapping, packing, etc.; in fact, for the same purposes as in any civilized country on the globe.

The industries peculiar to this Kingdom requiring paper and particularly located within this consular district are as follows:

(1) All kinds of ordinary and fancy pasteboard boxes, cases, etc., embossed, painted, lithographed, etc. (Specialty, all kinds of boxes for the use of apothecaries.) This industry is very important, and,

from the number of factories, one might safely say that Saxony is the center for pasteboard production. In this connection, it might be added that the box-making and riveting machine, with special patented method of fastening the corners with wire or tin clasps, is a Saxon invention, and from this the industry has developed.

(2) Fancy "penny toys," Christmas-tree ornaments, cotillion favors, etc., of paper and cardboard. There are quite a number of factories in this district doing a large export business.

(3) Photographic paper. Dresden is the center for the production of photographic paper.

(4) Chromo, lithographing, and art printing papers for Christmas and New Year's cards, calendars, etc., cigar labels, posters, etc.

(5) Cigarette paper and press-copying paper. Dresden is the center for the manufacture of cigarettes.

The paper used in Saxony is throughout of an inferior, cheap quality; even the Government offices, such as the ministries, city hall, and courts, use very poor paper. Very few firms use good, strong linen paper, and when they do they keep a small supply for foreign correspondence. Preference is given to light paper, as the German business man is extremely economical. The usual size of the business sheet is 9 by 8½ inches, while the envelopes measure 6 by 5 inches. The size of the sheets used by the Government offices is somewhat larger—8½ by 13 inches (about the size of our Government dispatch paper).

The usual terms of sale specify payment three months from date of invoice; but good, safe firms are allowed a credit for a whole year, provided they agree to take a certain quantity of paper each year. This custom originated in Leipzig, where seven-eighths of all the publishers in Germany have their books and pamphlets printed, and this latter fact explains the importance of the paper industry in the Kingdom of Saxony.

The quantity of paper consumed in this Kingdom, or within this district, is not obtainable, nor could a prominent paper broker give an approximate idea. An estimate given by the largest Saxon paper mill states that in 1897 the quantity of paper of all kinds consumed within the German Empire was about 500,000,000 kilograms (1,102,300,000 pounds), enough to fill 50,000 freight cars.

While, as stated, reliable figures regarding the consumption of paper for each class and kind are not obtainable for this Kingdom, nor for this consular district, and while several paper dealers whom I consulted positively refused to give me an idea, I have been able to secure the following as fair examples:

(1) The Neuste Nachrichten, a newspaper having the largest circulation in Dresden and surrounding country, in 1898 used 1,600,000

kilograms (3,527,360 pounds) of printing paper and paid 352,000 marks ($86,776) for the same. The market price is from 21 to 22 pfennigs (4.9 to 5.2 cents) per kilogram (2.2046 pounds).

(2) One of the largest publishers here uses about 5,000,000 pounds of paper per annum.

The total number of paper firms, companies, or brokers within the limits of this city is 192, of which the following seven are the principal, Richard Klippgen & Co. taking the lead:

Richard Klippgen & Co.
Klickermann & Co.
C. Kliemt.
Robert Hofmann & Co., Kreuz Stasse 19.
A. F. Kegler & Co., Schösser Gasse 9.
Otto Kunze, Marschall Strasse 27.
G. Neumann, Freiberger Platz, 21.

The publications printed in Dresden with special reference to the pulp and paper trade are:

(1) Holzstoff Zeitung, a weekly paper devoted to the paper, wood pulp, and pasteboard industry.

(2) Kartonnagen Zeitung, a semimonthly paper devoted solely to the pasteboard-box industry and the modern fancy packing system.

(3) The Zeitschrift des Königlich Sächsischen Statistischen Bureaus, a monthly pamphlet issued by the royal Saxon statistical bureau, containing many interesting reports and statistics bearing upon all the Saxon industries.

(4) Jahres Berichte der Königlich Sächsischen Gewerbe Inspectoren, an annual report compiled by the royal Saxon trade inspectors, who are appointed by the State to inspect every factory, mill, etc., once a year. This publication contains valuable statistics and is published by F. Lommatzsch (A. Schroer), Dresden, under the Royal Saxon Ministry of the Interior.

The best general directory of the paper industry in Germany is the Adressbuch der Maschinen-Papier- und Pappen Fabriken, by Günther-Staib, published in Biberach by Dorn & Haeberle.

The publication most universally read by the German paper manufacturers and dealers, and which is considered the best and most complete of its kind, is the Papier Zeitung, by Carl Hofmann, Berlin, W. Potsdamer Strasse, 134. The best general book on the paper trade is Handbuch für Papier Fabrication, by Carl Hofmann, as above.

The total number of printers in Dresden is, according to the city directory, 137. There are 10 large publishers and about 25 small ones; in addition to these, there are about 100 concerns that are entered as publishers, but really should be classed with the printers.

The number of the other classes of users of paper is as follows:

Pasteboard box and fancy paper articles, Christmas-tree ornaments, etc.	61
Photographic-paper manufacturers and dealers (among these are four large factories of photographic paper)	46
Pasteboard manufacturers and dealers	12
Manufacturers of other articles of paper, such as lanterns, napkins, envelopes, etc.	36
Lithographing establishments, art printing, engraving, phototype, etc.	128
Manufacturers of and dealers in artificial plants, flowers, decorations, etc., in Dresden and in Sebnitz, Saxony	205

The most important market for artificial flowers in Germany is Dresden, and enormous quantities of fine and coarse tissue paper are used in the manufacture of this article.

To recapitulate, the chief articles manufactured wholly or partly of paper within this consular district are ordinary and fancy boxes of paper and pasteboard, Christmas-tree ornaments, carnival and cotillion articles, fancy paper "penny toys," envelopes, artificial flowers and leaves, papier-maché goods.

The consumption of paper, considering the rapid growth of the population, has been increasing from year to year. During the last three years, the demand for cheaper grades of paper has been larger. Paper prices have gone down steadily, although the raw material does not cost less. The wages are somewhat higher, but the general condition of the market is at present considered favorable.

PRODUCTION.

Almost all the available water power in Saxony is used, and could be increased only by means of artificial dams. An old law—the "water right," which means the sole privilege of using the water of one stream—is still in force in many parts of this Kingdom. For instance, a mill owning such privilege can dam off the entire stream, so that factories or mills below the same are obliged to use steam power.

Saxony is densely intersected with railways, and many narrow-gauge lines wind their way almost to the highest points of the Saxon and Bohemian Alps, connecting on their way the numerous mills located along the small streams and brooks flowing into the River Elbe. The Elbe, which runs diagonally through Saxony, touching many important points in addition to Dresden, offers a cheap means of transportation by water through to Hamburg. It is navigable almost all the year round, as it seldom freezes over. Leipzig is considered the chief market for paper in Saxony, and is only 25 miles by rail from the nearest shipping point on the Elbe.

The Saxon and Bohemian mountains are covered with pine forests. The trunks are mostly floated down the streams to the mills, where they are used for the manufacture of the raw material. Owing to the perfect forestry system in Saxony, which is considered the best regulated in Germany, the supply of wood is practically inexhaustible.

The fuel mostly used is Bohemian brown coal, which is transported by rail and by water and is comparatively cheap, as the coal mines are not far away.

Transportation from Brüx—center of the Bohemian coal-mining district—to Dresden costs $11.50 per 10,000 kilograms (22,046 pounds) by rail, and an annual average of 25 marks ($5.95) by water and rail. The cost price of this coal at mine, exclusive of transportation, for large quantities is 25 to 40 marks ($5.95 to $9.52) per 10,000 kilograms, or one carload. Wood is not used as fuel.

The raw materials suitable for paper making are principally pine (red pine)—the German "Fichte"—straw, rags (linen and cotton), and waste materials. The wood of the fir tree (German "Tanne") is also used, but in small quantities. Saxony is a prominent market for rags and waste materials. The largest rag assorters—Messrs. Barth & Sohn, in Riesa, Saxony—handle about 3,000,0000 kilograms (6,613,800 pounds) of rags per annum, viz:

	Kilograms.
Cotton rags	1,000,000
Linen rags	250,000
For the manufacture of artificial wool	750,000
Jute baggings and waste materials	1,000,000

The average market prices per 100 kilograms (220.46 pounds) are:

Description.	Price.	
	Marks.	
Cotton rags	6 to 8	$1.43 to $1.90
Linen rags	14 to 16	3.33 to 3.81
Waste material (for pasteboard manufacture)	4	.95
Jute	2 to 3	.47 to .71

The transportation of rags, etc., costs 34 marks ($8.09) per 100 kilometers (62.5 miles) for 10,000 kilograms (22,046 pounds) by rail. The paper mills are all located within 30 miles from Riesa, so that the cost of transportation is not very heavy.

The finest papers are made out of Russian, Austrian, and Galician rags, which are imported into Germany in large quantities. These rags are superior to those collected in Germany, as the Russians, etc., wear a great deal of silk.

As regards wood pulp, reference is had to report sent from this office under date October 26, 1898, to the Department,* to which nothing can be added, as later statistics than those compiled are as yet not obtainable. The present market prices for wood pulp delivered free to paper mill are: Mechanical, 11 marks per 100 kilograms ($2.62 per 220.46 pounds); chemical, bleached, 26 marks ($6.19) per 100 kilograms; chemical, unbleached, 18½ marks ($4.40) per 100 kilograms.

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* See part 2, "Uses of wood pulp in Europe."

Straw pulp is manufactured in large quantities in Dresden and vicinity. The most salable quality can be purchased at 25.50 to 26 marks per 100 kilograms ($6.07 to $6.19 per 220.46 pounds) at factory.

PAPER-MAKING MACHINERY.

One of the largest and best factories for paper-making machinery is located in Saxony—Maschinenbauanstalt Golzern, vorm. Gottschald & Nötzli, in Golzern, Saxony. This factory exports to all countries, especially to Russia. Other factories in Saxony are:

Maschinenfabrik Tölle, Niederschlema, for coarse paper.

F. W. Strobel, Chemnitz.

Grahl & Hoehl, Dresden (paper-coating machines).

C. G. Haubold, Chemnitz (largest factory for calendering and paper-cutting machines).

Other factories in Germany:

H. Füllner, Warmbrunn.

Maschinenbau Gesellschaft Zweibrücken, in Zweibrücken, Pfalz.

Maschinenfabrik zum Bruderhaus, Reutlingen.

Gebrüder Hemmer, Neidenfels.

WAGES IN PAPER MILLS.

The average wages in a large paper mill in this district are as follows:

Class.	Wages.	
Male:		
"Holländer Müller" (chief engineer of the dyeing, pulp-grinding, and calendering machine)...per day...	*Marks.* 3.00	$0.71
His assistants...do...	2.20 to 2.40	$0.52 to .57
Chief engineer of paper machine...per month...	100.00 to 150.00	23.80 to 35.70
His assistants...per day (according to age)...	1.70 to 2.80	.40 to .66
Special engineer for calendering machine...per day...	2.80 to 3.50	.666 to .833
His assistants...do...	1.80 to 2.20	.43 to .52
Paper-cutting-machine engineer...do...	2.50 to 3.20	.60 to .76
His assistants...do...	1.00 to 1.50	.238 to .357
Female:		
Assorters (by contract)—weight of paper or number of sheets...per day...	1.40 to 2.00	.33 to .48
All other laborers...do...	1.20 to 2.00	.30 to .48

The chief engineer of the entire works and his assistants are paid from 180 to 300 marks ($45 to $75) per month.

PAPER, PASTEBOARD, PULP MILLS, ETC.

The following table shows the number of factories and mills producing wood pulp, paper, pasteboard, etc., in the Kingdom of Saxony, with number of persons employed and relative importance of mills:

TABLE A.—*Number of plants engaged in the manufacture of paper and articles of paper, with number of persons employed, according to the last census of June 14, 1895, in the Kingdom of Saxony.*

[Compiled by Saxon Ministry of Interior.]

Designation of classes of industry.	Number of principal plants.	Persons employed.			Small plants.*	Medium-sized plants.†	Large plants.‡
		Male.	Female.	Total.			
1.	2.	3.	4.	5.	6.	7.	8.
Wood-grinding mills	292	3,759	223	3,982	115	161	16
Manufacture of paper and pasteboard	§237	8,109	3,053	11,162	38	141	58
Manufacture of special kinds of paper	5	18	6	24	3	2	....
Manufacture of carton pierre and papier-maché	13	132	50	182	5	8	....
Manufacture of roofing paper and roofing felt	18	219	....	219	6	11	1
Manufacture of colored and fancy paper	31	742	668	1,410	4	18	9
Manufacture of wall paper and roller curtains	7	356	69	425	1	2	4
Manufacture of toys, etc., of papier-maché	7	88	16	104	2	5	....
Total	610	13,423	4,085	17,508	174	348	88

* Employing from 1 to 5 persons.

† Employing from 21 to 50 persons.

‡ Employing 51 and more persons.

§ Among these there are 68 plants (4 small, 24 medium, and 40 large), employing 7,218 persons, where only paper is manufactured.

One of the largest and best equipped paper mills in Germany is the "Patent Papier Fabrik Penig," in Penig, Saxony. It was founded in 1537 and put its first paper-making machine into operation in 1835. Practically, all kinds of paper are made in this factory. During the year 1896–97, 576,832 marks ($137,286) were paid out for salaries and wages to 46 clerks and 650 workmen. The water power is 800 horsepower, and the steam is equivalent to 1,680 horsepower. Eighteen boilers, with 2,294 square meters (2,744 square yards) heating surface, consumed 24,000,000 kilograms (about 52,910,400 pounds) of coal during the same year. The following figures give interesting statistics as to the gradual increase of the output of this factory:

	Pounds per day.*
1840	800
1868	6,000
1872	10,000
1873	13,000
1879	24,000
1889	48,000
1892	59,000
1897	68,000

The annual production of this factory was, from 1890 to 1897, as follows:

	Kilograms.†
1890–91	8,380,159
1891–92	8,651,982
1892–93	8,836,485
1893–94	9,284,697
1894–95	8,940,674
1895–96	9,795,993
1896–97	10,198,647

The total output of this factory from 1872 to 1897 was 136,868,229 kilograms (301,794,445 pounds).

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*1 German pound=1.1 pounds avoirdupois.

†1 kilogram=2.2046 pounds.

TABLE B.—*The principal plants, with motors and their motive power, of the paper and pasteboard industry of Saxony.*

[Compiled by Royal Saxon Ministry of the Interior.]

Designation of class of industry.	Principal plants.			Total of all principal plants which use elementary power for propelling power machines, etc.							
	Grand total of plants.	With motors.		Water.		Steam.		Gas.		Other elementary power.	
		Number.	Horse-power.	Plants.	Horse-power.	Plants.	Horse-power.	Plants.	Horse-power.	Plants.	Horse-power.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Wood-grinding mills	292	239	37,945.5	226	28,471.5	43	9,474	......	......	......	......
Manufacture of paper and pasteboard	237	200	32,051	183	16,298	119	15,679	3	74	......	......
Manufacture of special kinds of paper	5	1	5	......	......	1	5	......	......	......	......
Manufacture of carton pierre and papier-maché	13	3	20	......	......	2	16	1	4	......	......
Manufacture of roofing paper and roofing felt	18	3	8	......	......	1	2	1	4	1	2
Manufacture of colored and fancy paper	31	21	699.5	3	155	19	540.5	1	4	......	......
Manufacture of wall paper and roller shades	7	6	140	......	......	6	140	......	......	......	......
Manufacture of toys, etc., of papier-maché	7	1	6	......	......	1	6	......	......	......	......
Total	610	474	70,875	412	44,924.5	192	25,862.5	6	86	1	2

NOTE.—In column 3 each plant with motors is only mentioned once, while in columns 5, 7, and 9 each plant with motors is repeated as often as the headings, "water," "steam," etc., make it necessary.

TABLE C.—*Number of persons employed by the paper mills, factories of paper articles, etc., including managers, office clerks, etc., in the Kingdom of Saxony, according to sex.*

[Compiled by Royal Saxon Ministry of the Interior.]

Designation of class of industry.	Owners and managers.		Chief-clerk's office, book-keeping clerks, etc.		Technical superintendents, engineers, etc.		Assistants and laborers.		Members of family assisting in the work.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Wood-grinding mills	152	6	55	......	154	......	3,396	217	2	......	3,759	223
Manufacture of paper and pasteboard	213	5	301	2	324	......	7,266	3,041	3	4	8,107	3,052
Manufacture of special kinds of paper	3	......	1	......	2	......	12	6	......	......	18	6
Manufacture of carton pierre and papier-maché	14	......	8	......	6	......	104	50	......	......	132	50
Manufacture of roofing paper and roofing felt	12	......	24	......	4	......	179	......	......	......	219	......
Manufacture of colored and fancy paper	35	1	98	3	48	5	559	659	......	......	740	668
Manufacture of wall paper and roller shades	8	......	37	......	16	......	295	69	......	......	356	69
Manufacture of toys, etc., of papier-maché	5	......	4	......	3	......	76	15	......	1	88	16
Total	442	12	528	5	557	5	11,887	4,057	5	5	13,419	4,084
Grand total	......	......	......	......	......	......	......	......	......	......	17,503	

I have not been able, in spite of diligent effort, to ascertain the total output of each kind and class of paper and their value for this Kingdom, much less for this special consular district.

The production of the most important factories and mills in Saxony for the year 1896–97 was, according to the annual statements of the respective factories, as follows:

Factory.	Production.	Factory.	Production.
	*Kilos.**		*Kilos.**
Peniger Papierfabrik	10,198,647	Niederschlemaer Papierfabrik	4,956,311
Bautzner Papierfabrik	8,327,328	Crollwitzer Papierfabrik	4,500,000
Harlau'she Papierfabrik	7,500,000	Weissenborner Papierfabrik	3,704,090
Sebnitzer Papierfabrik	5,843,461	Chemnitzer Papierfabrik	2,869,500
Thodesche Papierfabrik	5,687,125	Dresdener Papierfabrik	2,232,060

* 1 kilogram=2.2046 pounds.

As to the value of paper produced, the following figures, obtained from the Bautzner Papierfabrik, the largest concern in this vicinity, give a fair example:

Year.	Production.	Value of paper sold.	
	Kilograms.	*Marks.*	
1894–95	6,887,630	2,711,528	$645,344
1895–96	8,040,547	3,118,151	742,120
1896–97	8,327,328	3,082,140	733,549
1897–98	8,217,266	2,948,567	701,759

The total production of paper per each machine per day is estimated at 6,000 to 7,000 kilograms (13,228 to 15,432 pounds).

An authority on the paper industry estimates the total production in the entire German Empire, during 1896–97, at 750,000,000 kilograms (750,000 metric tons), but says that during 1897–98 an increase of at least 75,000,000 kilograms (75,000 metric tons) may be safely accepted. Almost half of this enormous quantity is manufactured in the Kingdom of Saxony. The average price per kilogram being about 30 pfennigs (7.14 cents), the total value would be 225,000,000 marks ($53,550,000).

The power used in paper mills and factories, etc., is water (principally), steam, and gas.

The processes and methods of manufacture are absolutely modern. The paper is all machine made.

As to the general condition of the paper trade in Saxony, it might be said that there is at present rather an overproduction, and the dividends paid are low. This explains the recent formation of numerous stock companies, and there is a tendency to increase them.

IMPORTS.

In general, the imports of paper from foreign countries into Germany are limited. Cheap papers are not imported at all, but good linen note paper comes in fairly large quantities from England. Other kinds of paper imported are Japanese paper napkins, grease-proof paper, parchment, certain specialties of fancy colored paper from Belgium, wrapping and drawing paper and closet paper from England, a better class of writing paper from Austria, crepe paper from France, and "small hands" packing paper from Norway. Norway has attempted, with some success, to send printing paper to Germany; but the quantity is small.

The following is an estimate given by one of the largest paper factories of the value of imports of foreign paper for 1896–97:

Whence imported.	Value.	
	Marks.	
England	27,000,000	$6,426,000
United States	14,000,000	3,332,000
Holland	8,000,000	1,904,000
France	7,000,000	1,666,000
Switzerland	2,000,000	476,000
Italy	2,000,000	476,000
Denmark	1,000,000	238,000

This gives England the lead.

The prices paid for the different kinds of imported papers, so far as obtainable, are as follows:

English note paper, 1.50 to 1.70 marks (35.7 to 40 cents) per kilogram (2.2046 pounds), duty paid, free Dresden.

English and French "crepe paper," 6d. (12 cents) per roll.

English and American closet paper, 40 to 60 pfennigs (9.5 to 14 cents) per kilogram, free Dresden.

Grease-proof paper from Belgium, 50 to 70 pfennigs (11.9 to 16.6 cents) per kilogram, free Dresden.

English wrapping paper from Ed. Lloyd, Limited, London, 25 to 30 pfennigs (5.9 to 7.1 cents) per kilogram, free Dresden.

Norwegian printing paper, 18 pfennigs (4.2 cents) net cash per kilogram at Hamburg; the same delivered, free Dresden, 21¾ pfennigs (5.1 cents) per kilogram.

Drawing and sketching paper, English, 4 marks (95 cents) per kilogram at mill, duty not paid.

Writing paper (better class), from Austria, 80 pfennigs (19 cents) per kilogram, free Dresden.

The Japanese business is transacted through London or through

Hamburg. Business from other countries is effected as directly and as cheaply as practicable, usually by water to Hamburg and then by the River Elbe, so far as this mode of transportation offers an advantage.

The banking, mail, and telegraphic facilities are good. The countries mentioned are all within the General Postal Union.

OPENINGS FOR AMERICAN PAPER, ETC.

There is most decidedly an opening for fine grades of American writing and note paper; also all kinds of coated art-printing paper. A prominent art-printing establishment tells me that American art-printing paper is considered superior to the German. The principal competitor is England, and the only sensible course to pursue in order to introduce American paper into Germany is to send technical men here, who must visit the wholesale dealers or appoint local agents. It is, in my opinion, a loss of time and money to send samples by mail to a dealer with price list, unless it is a quality of paper which is not known or not made in Germany. While several dealers with whom I conversed on this subject tell me that they will only be too glad to see new kinds of paper, the paper manufacturers will do anything to prevent foreign paper from coming into Germany, and it therefore requires personal and continual attendance to gain a foothold for American paper in this country, where the industry has gained practically the foremost rank in the world.

Blotting paper and linen-lined paper are of very poor quality here. These two classes are far superior in America, and I think would sell readily here.

I do not believe, however, that there is an opening for articles made of paper, as the wages here are so low.

EXPORTS.

All classes and kinds of paper are exported from Germany to foreign countries. The principal kinds from this district are: Colored, gold, and silver paper, packing paper, photographic paper, writing paper (cheap classes), printing paper, cigarette paper, paper and pasteboard fancy goods, wall paper.

The following table gives the amounts and values of the different kinds of paper and articles made of paper exported from Germany to foreign countries for the years 1888, 1892, 1896, and 1897. This table shows that printing and writing and packing paper take the lead in weight, and colored, gold, and silver paper rank first in value.

Quantities and values of paper and goods made of paper exported from Germany during the years 1888, 1892, 1896, and 1897.

[Compiled by Berlin Statistical Office.]

Description.	1888.			1892.		
	Quantity.	Value.		Quantity.	Value.	
	Tons.	*Marks.*		*Tons.*	*Marks.*	
Colored, gold, and silver paper..	4,454	20,000,000	$4,760,000	6,004	24,000,000	$5,712,000
Packing paper, smooth and coarse....	5,091	1,700,000	404,600	19,678	6,300,000	1,499,400
Photographic paper....	433	3,900,000	928,200	556	5,000,000	1,190,000
Writing paper, printing paper, etc....	27,555	19,300,000	4,593,400	36,156	14,500,000	3,451,000
Not specially described (parchment, asthma, and cigarette paper)....	3,768	4,000,000	952,000	4,058	3,900,000	928,200
Paper and pasteboard articles..	7,762	13,200,000	3,141,600	7,915	12,700,000	3,022,600
Wall paper....	....	....	....	2,392	2,200,000	523,600

Description.	1896.			1897.		
	Quantity.	Value.		Quantity.	Value.	
	Tons.	*Marks.*		*Tons.*	*Marks.*	
Colored, gold, and silver paper..	7,089	28,400,000	$6,759,200	6,342	22,800,000	$5,426,400
Packing paper, smooth and coarse....	32,047	9,800,000	2,332,400	30,663	9,500,000	2,261,000
Photographic paper....	345	3,100,000	737,800	334	2,800,000	666,400
Writing paper, printing paper, etc....	45,192	13,700,000	3,260,600	39,398	12,500,000	2,975,000
Not specially described (parchment, asthma, and cigarette paper)....	5,771	5,500,000	1,309,000	5,914	5,300,000	1,261,400
Paper and pasteboard articles..	10,297	16,500,000	3,927,000	10,646	17,000,000	4,046,000
Wall paper....	3,379	2,500,000	595,000	3,893	3,100,000	737,800

The exports of paper and paper ware from this consular district to the United States have decreased considerably since 1890, viz:

Fiscal year ending June 30—

1890....	$501,953.30
1891....	297,222.85
1892....	341,765.31
1894....	162,028.49
1895....	169,418.22
1896....	150,281.27
1897....	44,946.26
1898....	27,000.78

The above figures include photographic paper. Paper and pasteboard goods are also largely exported, especially fancy boxes and cigarette boxes. The estimated total value of these goods exported from Germany during the first two quarters of 1898 was 49,410,000 marks, against 46,600,000 marks for the corresponding quarters in 1897, an increase of 2,810,000 marks ($668,780).

FREIGHT RATES.

The following rates are by rail per 100 kilograms (220.46 pounds) per 100 kilometers (62 miles):

CLASS A.	Pfennigs. Cents.
Rags, wood for pulp, ground wood	34= 8
Other fibers and waste materials	54=12.8
Wood pulp for paper making	44=10

The above rates are for transportation by rail within the Kingdom of Saxony. As stated in report, the mills are not more than 25 kilometers (15.5 miles) from paper factories, so that the cost of transportation of raw material is of very little influence.

The transportation of the above materials by rail from Dresden to Hamburg is as follows per 100 kilograms (distance, 456 kilometers=283 miles):

	Marks. Cents.
Rags	1.12=26.6
Mechanical wood pulp	1.12=26.6
Wood pulp for paper making	1.72=41
Waste (cotton, wool, etc.)	2.17=51.6
Chemical wood pulp	2.17=51.6

The transportation by water from Dresden to Hamburg is, per 100 kilograms:

	Pfennigs. Cents.
Rags in bales	50=11.9
Wood flour, ground wood in bags	90=21
Wood pulp, packed	60=14
Waste materials (cotton and wool)	60=14

CLASS B.

The rates by rail for the products of paper mills as mentioned in circular are 54 pfennigs (12.8 cents) per 100 kilograms (220.46 pounds) per 100 kilometers (62 miles). A carload has usually 10,000 kilograms (22,046 pounds), and paper is usually freighted per carload.

The rate from Dresden to Hamburg is 2.17 marks (51.6 cents) per 100 kilograms.

Rates by water from Dresden to Hamburg per 100 kilograms are:

	Pfennigs. Cents.
Printing, writing, and packing paper	60=14
Pasteboard	60=14
Colored and tissue paper	70=16.6

Paper and articles of paper are usually shipped from Dresden to Hamburg per water (River Elbe), and from Hamburg they go by water to Russia, France, Belgium, England, etc. Paper is seldom sent overland into Russia or France.

The freight rates from Dresden to Myslowitz (Russian boundary) are 2.19 marks (52.1 cents) per 100 kilograms; from Dresden to Metz (French boundary), 3.64 marks (86.6 cents) per 100 kilograms.

The freight rates on the River Elbe vary a good deal, according to height of water. The rates are calculated according to special schedules from point to point. A rate per 100 kilograms per 100 miles was not obtainable. Freights from Hamburg to other countries are not obtainable here in reliable figures.

CHAS. L. COLE,
Consul-General.

DRESDEN, *February 25, 1899.*

CHEMNITZ.

Saxony, in a certain sense, may be looked upon as the center of the Empire's paper trade. Leipzig is undoubtedly the world's largest book center. There is scarcely an industry in which paper is used that is not found here.

RAW MATERIAL.

The use of wood pulp for purposes of paper production had its origin in this Kingdom. To-day, there are 260 mills—45 per cent of Germany's total number (580)—engaged in its production. Saxony is rich in water power (at least 50,000 horsepower are now in use), and it is the proximity of these to the mills that has made possible her wonderful development in this line. The wood pulp produced runs up to 300,000 to 360,000 long tons, seasoned, valued at about $2,500,000. Of these 100,000 to 120,000 tons are put into pasteboard at the mills, 60,000 to 80,000 tons are taken by the paper-making plants, and 150,000 to 160,000 appear on the market. Exports go to various parts of the Continent and, recently, to the United States. Of Germany's 33 straw-stuff mills, Saxony has 9; and 9 of the Empire's 69 cellulose mills. Out of 346 pasteboard mills in Germany, Saxony has 102, or 30 per cent. Of Saxony's 102, 39 make leather boards. The Kingdom has 85 paper mills, with 204 machines, these figures being, respectively, 17 and 20 per cent of the total number in the Empire. The year's product in paper and pasteboard is about 200,000 tons, worth from $14,000,000 to $15,000,000. Most of the paper manufactured is of the poorer grades, used for newspapers, etc. Dresden and Leipzig lead in specialties, among which may be mentioned photographic paper (albumen). Exports to the United States in this line, once large, have declined from $446,012 in 1890 to $74,256 in 1896. This fact, however, loses its importance when it is pointed out that the Dresden manufacturers, in order to hold the United States market, opened a branch establishment in New York in 1894. Perhaps the most important part of Saxony's paper industry is situated in Leipzig, viz, the making of chrome paper, or paper for colored impressions, glazed, and other fancy papers. Leipzig has 550 hands in these lines alone, with an annual product worth $595,000. From the country around Schneeberg, $119,000 worth goes annually to the United States. The Kingdom's yearly product of paper hangings amounts to $476,000. In this line, a very high degree of perfection, both in artistic effect and intrinsic value, is often attained. Enormous quantities of pasteboards are produced. Almost every branch of manufacture in Saxony, if not in the Empire, needs this line of goods. Hosiery, underwear, gloves, toys, and textiles of all kinds are sent out in pasteboard boxes. A factory near Dresden (Loschwitz) works with methods and machines of its own invention and production. One firm in Leipzig has 150 hands making boxes for the hat and fur trade. Some firms make fancy articles and stationery, millions of marks' worth of which are sent to England, her colonies, and other foreign countries. About 300 hands are employed making paper tubes used by cotton and woolen spinners.

BOOKBINDING.

Inasmuch as Leipzig is one of the world's great book markets, it employs fully 5,000 hands to bind the volumes. Of these, 4,500 are employed in mills, the others in their homes. America and England are among Leipzig's most important customers. Account books are made on a large scale in Leipzig, Dresden, and Chemnitz.

IMPORTS AND AMERICAN TRADE PROSPECTS.

Saxony's paper imports are, for the most part, small. Of these, the bulk is in the form of books and Irish letter paper. How much it amounts to in a year, I have not yet been able to ascertain. If a word from a consul working among these people is worth anything, I would say to our paper makers, Put forth all your efforts to meet the Germans in South America, the East, Africa, Australia, Canada, etc. You will not make much progress here; and if you do sell, it will be for a day, week, month, or year at most; not for any long period of years. It is just possible that paper pulp might sell, as wood here is very dear. Machines for paper mills are made in this city and are sent to all parts of the world.

J. C. MONAGHAN,
Consul.

CHEMNITZ, *December 29, 1898.*

AIX LA CHAPELLE.

POPULATION.

The population, according to the census of 1898, was 129,000; it is estimated at present at 130,000. The percentage of illiterates, I am informed, is one-third of 1 per cent.

The people have decided mechanical traits.

CONSUMPTION AND MANUFACTURE.

Paper is used for packing, printing, writing, and drawing. Packing paper is required in great amount. Light weight is required for writing paper and envelopes, size and quality average. I can not give exact market prices for each class. Terms of sale are from three months to one year.

It is impossible to ascertain the quantities and values of paper consumed.

There are about 31 paper firms in this district. The principal manufacturers are:

Steinbach & Co., Malmedy.
Stein & Steinert, Düren.
Carl Schleicher & Schull, Malmedy.
Leopold Schoeller Sohne, Düren.
Gebruder Hoesch, Krezau.

The principal dealers are:

Fred. Hocks, Löhergraben 25, Aix la Chapelle.
Heind. Bachus, Kleinmaschierstrasse 6, Aix la Chapelle.
D. Servos, Harscampstrasse 74, Aix la Chapelle.
G. Urban, Comphausbad 40, Aix la Chapelle.
Albert Löb, Alexanderstrasse 37, Aix la Chapelle.

I am unable to ascertain the exact number of printers; I think there are not more than 100. There are 5 publishers.

Writing, lithographing, drawing, packing, and photographic paper are manufactured here.

PRODUCTION, WAGES, ETC.

There is no water power in Aix la Chapelle. In the matter of railways it is well situated, but no navigable waters are in this consular district. The Düren and Malmedy factories have fair water power from mountain streams. There is very little undeveloped water power.

Coal and wood are used as fuel, coal chiefly, which is bituminous and costs $4 maximum and $2 minimum per ton of 2,204.6 pounds.

Wood, rags, and straw are employed in making paper. Straw and wood are plentiful. In the year 1897, the following quantities of materials were consumed by paper mills situated in the Aix la Chapelle consular district: Wood, 3,008 tons; rags, 2,206 tons; ground wood, 378 tons; chemical fibers, 777 tons.

Straw costs about $14 per ton; wood, about $4 per cord.

The facilities for making paper machinery are good, but none is made.

The cost of labor in paper mills is about 1½ to 3 marks per day. The men are efficient.

There are 5 or more paper mills in this district. The output is not known. Steam and water power are used.

The methods of manufacture are secret. The paper is machine made.

IMPORTS.

Paper, cardboard, wall paper, and paper shavings are imported. The finer grades of tinted writing paper and card paper are obtained from England.

BANKING AND MAIL FACILITIES.

The banking facilities and financial connections with various countries are good.

Mail goes to America two or three times per week, taking eight to ten days; to England, service is four times daily; time, eight to ten hours.

OUTLOOK FOR AMERICAN TRADE.

I see no opening for American products, unless lower prices or special conditions in competition with present goods on the market are offered. The United States should send agents with samples to build up its exports to this district.

EXPORTS.

Surface-coated paper, plain-basis photographic paper, cellulose paper, drawing paper, tracing paper, and cards are exported. The shipments are chiefly to American firms; some to England and Italy.

FRANK M. BRUNDAGE,
AIX LA CHAPELLE, *February 8, 1899.* *Consul.*

ANNABERG.

The paper-manufacturing industry is inconsequential in this consular district. There are no exporting or importing houses here. The retail merchants receive their supplies from the larger German cities.

JNO. F. WINTER,
Consul.

ANNABERG, *December 19, 1898.*

BRESLAU.

I translated the questions contained in Department circular into German in the hope of obtaining the desired information from Cellulose Fabrik Feldmühle, at Cosel, Papier Fabrik Sacrau, the board of trade, or from Mr. Von Gablenz, a manufacturer at Haynau; but I have been unsuccessful. Mr. Von Gablenz writes me that he fears the inquiries are directed against the German trade. He adds:

> Our industry is bad enough, and the export to the United States is almost entirely lost on account of the high duties.

C. W. ERDMAN,
Consul.

BRESLAU, *January 28, 1899.*

COBURG.

There are no industries in the Thuringian Mountains connected with paper or wood pulp; the local products consist of dolls, toys, and sundry kinds of china ware.

There is no paper mill of any kind or even a large wholesale establishment for the sale of the same here. Only the commonest grades of writing and packing paper, coming mostly from the southern portions of the Empire, are used.

According to the statistics of the Imperial German Government, the United States sent Germany 12,051 tons in 1897 and Germany sent to the United States 53,079 tons.

There may be an opening for American packing paper of the cheapest quality in this district; but before anything can be stated, samples must be submitted.

I would recommend our manufacturers to send samples to this consulate, with exact net prices f. o. b. New York, which could be submitted to interested parties here. A still better plan would be to send a well-qualified salesman who could speak German. All prices must be quoted in German marks and weights given in kilograms.

OLIVER J. D. HUGHES,
COBURG, *December 22, 1898.* *Consul.*

COLOGNE.

POPULATION.

The population of Cologne is 353,000; of this consular district, about 3,000,000. Less than 1 per cent are illiterates.

CONSUMPTION AND PRICES.

The uses of paper are similar to those in America. All kinds find a market here. Prices are about as follows: White news, 20 marks ($4.76) per 100 kilograms (220.46 pounds); glazed printing, 24 marks ($5.71) and upwards; packing, 10 marks ($2.38); and writing, 30 marks ($7.14) and upwards.

The terms of sale are three months net, or thirty days less 2 per cent delivered free. There are only two paper firms in this district.

PRODUCTION, FUEL, WAGES, ETC.

The people have mechanical traits and produced paper much earlier than it was made in America.

Materials for paper, such as trees, straw, and rags, are abundant; but the rags are largely exported.

Coal and petroleum are used as fuel, and transportation facilities are good.

About a dozen firms make paper machinery. Men working in the mills receive from 2 to 4 marks (48 to 95 cents) per day; girls, 75 pfennigs to 2 marks (17.8 to 48 cents).

The paper is mostly machine made; very little is made by hand. The processes and methods of manufacture are modern.

IMPORTS.

Fine English note paper, special English packing papers, French and linen paper are imported. These cost from 10 to 25 cents per pound. Writing paper also comes from Austria, common note from Belgium, and wood-pulp boards from Sweden. The import of paper is limited on account of the customs tariff. Some shipments of pulp come from Finland, Sweden, Norway, and Austria.

OUTLOOK FOR AMERICAN TRADE.

The prospect for building up American trade with this locality is not very flattering, from the fact that the export business from this country has been almost wholly destroyed by reason of our tariff, and parties in the business here feel bitter toward our country. I regard our present commercial relations with Germany as unsatisfactory, not only as regards the paper trade, but concerning many other articles of commerce. The agrarian interests seem to be very hostile to all American traffic, and are able to command legislation which in its effects bears heavily upon the commercial classes as well as upon the consumers of our various products.

INFORMATION REFUSED.

In my search after information for this report as well as for others, I have met many obstacles. Business men here are slow to impart information in relation to their industries, fearing that it will be used in competition with their trade. This, together with the friction caused by the extension of trade in United States products, at times makes it very difficult for a consul to secure full and complete data.

JOHN A. BARNES,
Consul.

COLOGNE, *January 30, 1899.*

FRANKFORT.

POPULATION.

The consular district of Frankfort is a purely arbitrary division of territory, including the Prussian province of Hesse-Nassau and portions of the Kingdom of Bavaria and the Grand Duchy of Hesse adjacent to the city. There are for this district no statistics of import and export, except "the total declared values of exports to the United States" made out at this consulate. The statistics relative to the export and import trade relate to the whole of Germany and are compiled from the official published returns of the imperial bureau of statistics. The total population of this consular district is about 2,500,000; the total population of Germany, according to the census of 1895, was 52,279,900. There was a thirteen-per-thousand increase in the population of Germany from the year 1890 to the year 1895, and the subsequent ratio of increase is probably similar.

Germany is a large consumer of paper, as may be inferred from the fact that less than one-third of 1 per cent of the total population of the country is illiterate. As technical education is extremely advanced and there exists no lack of business enterprise, the demand has been more than met by a production which, especially in the finer grades of paper, has found valuable markets in foreign countries.

CONSUMPTION.

The uses for paper in this district are similar to those in the United States, and there exist no industries peculiar to the country requiring the use of paper.

According to the statement of a large dealer, whom I know to be well informed and trustworthy, the papers principally sold are bought at the following wholesale prices:

Ordinary writing paper, 15 to 24 cents per kilogram (2.2046 pounds), wholesale price for 300 kilograms (661 pounds).

Finer sorts of writing paper, 24 to 48 cents per kilogram sold in bales of 5,000 double sheets. The sizes of writing paper generally used are 46 by 59, 59 by 92, 48 by 64, 64 by 96, the unit of length being the centimeter, which is equal to 0.3937 inch.

Printing paper for books, 11 to 15 cents per kilogram, wholesale price for 500 kilograms (1,102 pounds).

A newspaper in Frankfort pays 23¾ pfennigs (about 6 cents) per kilogram, the wood pulp out which the paper is made being sold for $3.25 per 100 kilograms (220.46 pounds). The news paper was offered as low as 21 pfennigs (about 5¼ cents) per kilogram, but as no security could be given for a contract of long-time delivery, the offer was not accepted. A large newspaper in Leipzig pays 25 pfennigs (about 6¼ cents) per kilogram. A large printing establishment in Berlin pays as low as 20¼ pfennigs (about 5 cents) per kilogram. These prices were obtained from the newspapers directly.

Wrapping paper, about 16 cents per kilogram, wholesale price for 500 kilograms.

Pasteboard and paper for printing pictures, 30 to 33 cents per kilogram.

In Frankfort, there are 25 wholesale paper dealers and 29 stationers dealing in writing materials and paper; but the jobbers and brokers who would be found in an American city do not exist, as the retailers deal directly with the manufacturers. The larger wholesale dealers are:

Bock, Obermainstrasse, 8.
Flinsch, Gr. Kornmarkt, 12.
Freund, Schäfergasse, 12.
Geigersche Papierhandlung, Töngesgasse, 21.
Siegesmund & Co., Kornmarkt, 15.

There are 17 technical journals and 19 newspapers in Frankfort.

Some of the newspapers have a large circulation, and the Frankfürter Zeitung in particular is widely read throughout Germany. The principal papers are: Frankfürter Zeitung, General Anzeiger, Intelligenzblatt, Lokal Anzeiger d. Stadt Frankfurt.

It is the opinion of the paper manufacturers with whom I have talked that the gradual increase in the consumption of paper in Germany, which has been maintained for years, is bound to continue. There exist, however, no statistics by which the rate of increase can be gauged.

The entire paper trade of this country is in the hands of Germans.

PRODUCTION.

I was informed at Aschaffenburg, where the principal paper factories of this district are located, that water power is not used in this part of Germany.

The manufacturers of paper in this district use coal exclusively as fuel; it costs from $4.04 to $4.28 per long ton at the factories.

The raw materials used in the manufacture of paper are spruce or pine wood and rags.

There exist no exact statistics as to the amount of wood suitable for the manufacture of paper in the German Empire, but, owing to its admirable system of forestry, the forests of Germany are slowly increasing and the wood used for the manufacture of paper is nearly all produced within the country at present. Rags are exported to a considerable extent. Wood for pulp costs, first quality, $4.50 per cubic meter (35.6 cubic feet) and, second quality, $4 per cubic meter. Mechanical wood pulp costs, first quality, $4; second, $3.50. The railroad facilities for the transportation of wood are good, and some of the factories in this district, as for instance those situated at Aschaffenburg, get some of their wood by water.

The rags of this district are distributed from Frankfort to the factories and are gathered in the country. A great part of them go to the Palatinate, an adjacent province, and to the United States, as most of the factories of the district use wood only. For the following list of prices to manufacturers in southern Germany at factory, I am indebted to a large dealer—Mr. Ignatz Berger, 13 Friedbergstr: Price per 100 kilograms (220.46 pounds), dark old cotton, $1.62; middle old cotton, $2.75; light old cotton, $3.50 to $3.75; old gray and blue linen, $4.75 to $5; old white cotton No. 1, $8; No. 2, $3.75; old white linen No. 1, $8.75; Nos. 2 and 3, about $6.50; old jute No. 1, $1.50; No. 2, 80 cents. Less than 5 per cent of the rags sold to German factories are new. New white cotton costs $9.50 to $10; linen, fine, $10; coarse, $12.

There are 57 paper factories in this consular district. The following statistics for the whole of Germany are taken from the Adressbuch der Papier und Papierstoff Fabriken von Güntter-Steib.

Paper industry in Germany.

Description.	1897.	1898.
Paper factories	463	485
Pasteboard factories	336	406
Mills	40	40
Table machines	....	918
Cylinder machines	....	523
Vats	....	117
Factories for—		
Stuff grinding	580	601
Cellulose	69	71
Straw pulp	33	30
Half-rag pulp	5	5

These statistics are complete as far as the establishments in operation are concerned, but, as some of the factories refused to give information about the number of machines in operation, the figures given here are too small. The author estimates the machines as follows: Table machines (Langsiebmaschinen), 925; cylinder machines (Rundsiebmaschinen), 600; and 125 vats. Estimating the yearly production of the first at 900 tons, of the second at 300 tons, of the third at 15 tons, the total German production of paper and pasteboard was at least 1,000,000 tons during the year 1898.

Steam power is generally used, only some of the finer kinds of paper being made by hand.

The processes and methods of manufacture are thoroughly modern and are being constantly improved. The general tendency of production seems to be to increase the size of the plants so as to meet the sinking tendency of prices which has continued for some years by small profits on large sales.

According to the Frankfürter Zeitung, a paper which is generally well informed in matters of business, there exists a serious danger of overproduction when the large number of industrial works at present projected shall have been completed. It expresses the wish that financial circles which are less confident will exert a restraining influence on the general industrial expansion which, encouraged by increased consumption and good times, threatens to glut the markets in the near future, and it also calls attention to the fact that, in spite of protective tariffs, American manufactured goods are forcing their way more and more into the European markets. It is probable that the risk of overproduction is fully as great in the paper industry as in any other branch of manufacture in this country, as all attempts to regulate production or maintain prices have proved abortive, in spite of the fact that the production is increasing more rapidly than the consumption of paper, and that this increase, which has continued for a number of years, will probably be larger than usual this year. It is undoubtedly true that the export trade is increasing, and that in certain of the finer lines of paper, such as photographic, writing paper, etc., it is on a most substantial basis; but the competition in the world's markets is becoming more and more intense, so that it is extremely likely that the manufacture of paper may be overdone during the next few years in Germany. Such a state of affairs might check production for a time, but would probably lead to the formation of a syndicate similar to those that exist for many of the staple products of this country.

For a detailed description of the pulp in this district, I would refer the reader to the special reports of November, 1898, and May, 1893, made by this office, which are printed in the Consular Reports.*

MANUFACTURE OF PAPER MACHINERY.

Paper-making machinery of all kinds is made in Germany, and this kind of machinery is largely exported. Catalogues can generally be obtained containing minute descriptions and illustrations of all machines sold; sometimes even English catalogues are to be had.

List of manufacturers of paper-making machinery:

Ferdinand Flinsch Actien-Gesellschaft, Maschinenbau, Offenbach-on-Main.

Gebrüder Hemmer Actien-Gesellschaft, Neidenfels bei Lambrecht Rhein-Pfalz.

Gustav Joelle, Maschinenfabrik and Eisengiesserei, Niederschlema, Sachsen.

Maschinenfabrik zum Bruderhaus, Reutlingen, Wurttemberg.

WAGES.

Within this consular district labor generally brings in the paper factories from 60 cents to $1 a day, only the most expert workmen earning $1.25. In some other parts of Germany, labor can be obtained much cheaper, as, for instance, in Saxony, where it can be obtained as low as 30 cents a day. One large paper manufacturer, who has been some years in an American paper mill, made the statement that, owing to the greater quickness and efficiency of American workmen, he doubted if labor really came cheaper to the German manufacturer.

IMPORTS.

The kinds of paper imported are: Tan paper, from Great Britain; gray filter paper and pasteboard, from Austria; polishing, roofing, and fly paper, from the United States; packing paper, from Austria,

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*See Consular Reports No. 152 and part 2 of this volume ("Uses of wood pulp in Europe").

Sweden, and the United States; photographic paper in small quantity from England; silk tissue and fine filter papers, from France, England, Austria, and Sweden; writing papers, from France, England, and Austria; printing paper, from Belgium; drawing paper and colored gilt and silver paper, from England; imitation leather to the extent of 126 tons in 1897, from the United States.

The total amounts of each class imported in 1897 were: Gray filter paper, 711 tons; pasteboard, 3,511 tons; roofing, polishing, and fly paper, 205 tons; coarse packing paper, 256 tons; fine calendered packing paper, 1,499 tons; photographic paper, 42 tons; colored gold and silvered paper, 141 tons; fine tissue and filter papers, 946 tons.

Importations for the year 1897, given above, were in quantity, for the reason that all duties being specific, the statistics of the custom-house are in weights only. Values of imports are officially estimated, but are not published in detail. The imports of paper and manufactures of paper into Germany during the year 1896 were valued at $3,004,988; those for the year 1897 were valued at $3,238,466.

IMPORT DUTIES.

The import duties on paper of different kinds imported into Germany are as follows, per 100 kilograms (220.46 pounds):

Description.	Duty.	
	Marks.	
Asphalt and tar paper	1	$0.23
Coarse gray blotting paper	1	.23
Cellulose, straw, and other papers	1	.23
Pasteboard	1	.23
Packing and leather papers	1	.23
Calendered wrapping paper	3	.71
Photographic paper	10	2.38
Colored, gilt, and silver paper	10	2.38
Silk and fine filter paper	6	1.42
Writing papers	6 to 10	$1.42 to 2.38
Printing paper	6	1.42
Drawing paper	10	2.38
Papers not otherwise designated	10	2.38

BANK, MAIL, AND TELEGRAPH FACILITIES.

The banking facilities of Frankfort and its financial connections with other countries, including the United States, are as extensive and complete as those of any city in Europe. There are nearly two hundred banks in Frankfort, many of which possess large capital and have most important relations with New York, Chicago, and other financial centers.

The mail and telegraphic facilities between Germany and the countries from which paper is imported—Austria, Sweden, France, Belgium, England, and the United States—are as perfect as possible.

OUTLOOK FOR AMERICAN TRADE.

No country controls the paper import into Germany. Austria furnishes the largest bulk, Great Britain second, and the United States, Sweden, and Belgium next in the order named.

Other countries are sending expert German-speaking salesmen, who adapt their methods of doing business to those of the country. Americans alone try to sell goods in Germany without a knowledge of the language and attempt to impose upon purchasers American terms of "cash payment."

Owing to the fact that rags are cheaper in Germany than in the United States, it is not likely that there is a market for the finer qualities of writing paper. As colored photographic and tissue papers were exported from the Frankfort district to the value of $122,955 during the fiscal year ended June 30, 1897, and $156,215 during the fiscal year ended June 30, 1898, there is no opening for these papers at present. According to the statement of a manufacturer, who worked for some time in an American paper mill as a matter of business training and revisited the United States after an absence of several years, the progress made during that time was remarkable, and, helped by a protective tariff, it is only a question of time before the United States practically produces all its own paper. If the United States develops new and special processes for the manufacture of the finer and more expensive grades of paper, as is likely to be the case, it will be possible, with proper pushing, to do a large business with the finer grades; but, owing to the progressive character of German manufacturers, the keen competition, and the cheapness of labor in this country, it is probable that such a trade would be only temporary. It is likely that the largest field for the American exporter of paper lies in the cheaper grades, made exclusively of wood and to be used by newspapers or for packing. The fight will be somewhat harder in this country than in England, as wood is cheaper and such paper is protected by tariff. Before attempting to compete, American manufacturers should send a competent business man to study the field, show samples, and get offers.

Large German manufacturers and syndicates are willing to introduce their wares at small profits, or even at a loss, in foreign countries, and by selling at lower prices than in Germany they have established valuable markets. It is by this kind of push and by reducing the cost of production in the United States by using only the most perfect methods of manufacture that a trade of great possibilities may be acquired. German newspapers insist upon long-time contracts and guaranties for regular delivery, and these requirements must be fulfilled. In order to sell paper in a country where the supply is equal to the demand, it will be necessary to undersell the local manufacturers and to have supply depots whence goods may be delivered promptly upon demand. For southern Germany, such a depot should be established at Antwerp or Rotterdam, whence paper can be shipped by cheap water rates to all the important cities on or near the Rhine, and a valuable trade with the Netherlands might be established. For the trade of northern Germany, Hamburg or Berlin would probably be the most advantageous location. Capable sellers should then be sent out to push sales and establish agencies.

The trade in the cheaper grades of paper is necessarily dependent upon the cheaper price of wood in the United States, which can only be maintained by careful protection of our forests. Our country has much to learn from Germany in the matter of forestry, and, unless precautions are taken, it is only too probable that American competition in Germany with cheap papers will be prevented by the fact that wood may become dearer.

Of course, competition is yearly growing closer, and it is important that any possible opening should be taken advantage of before it is occupied by a rival. It is probable that Sweden will eventually be the most serious rival, owing to its vast forests and the abundance of water power in close proximity to the ocean.

EXPORTS.

The kinds or classes of paper exported from Germany were, during the year 1897, as follows (values not accessible):

Description.	To—	Quantity.
		Tons.
Asphalt and tar paper	Netherlands	961
Gray filter and straw paper	Great Britain	93
Pasteboard	Denmark	673
	Great Britain	9,843
	Netherlands	346
	Austria-Hungary	822
	Russia	683
Uncalendered wrapping and packing paper	Belgium	1,631
	Great Britain	6,280
	Italy	580
	Netherlands	1,905
	British East Indies	404
	Japan	641
	Brazil	361
Enameled and leather paper	Great Britain	1,141

Exports—Continued.

Description.	To—	Quantity.
		Tons.
Fine calendered wrapping paper	Belgium	1,469
	Great Britain	8,116
	Netherlands	1,909
	Austria	335
	Switzerland	299
	Japan	366
	Brazil	334
	United States	362
Photographic paper	Belgium	14
	France	19
	Great Britain	57
	Italy	23
	Netherlands.	17
	Austria	63
	Russia	25
	Switzerland	13
	Japan	7
	United States.	37
Colored, gold, and silvered papers	Total	6,342
	Great Britain	1,778
	Austria	357
	United States	1,597
Fine filter paper	Great Britain	931
	Netherlands	222
Writing paper	Belgium	279
	Denmark	478
	Great Britain	862
	Netherlands	977
	Austria	313
	Sweden	529
	Switzerland	470
	Argentina	635
	Brazil	558
Printing paper	Belgium	500
	Great Britain	13,274
	Netherlands	3,247
	Portugal	595
	East Indies	788
	Japan	3,161
	Argentina	2,908
	Brazil	2,669
	Chile	328
	Uruguay	409
	United States	397
	Austria	588
Drawing paper	United States	105
Papers of various kinds, not otherwise designated.	Total export for the year (to various countries, principally Great Britain, Sweden, and Brazil).	5,913

There are no export duties on goods of this class sent from Germany.

The value of exports from Germany can only be given in totals and are taken from estimates of the imperial bureau of statistics. The value of exports of paper from Germany are, for the years given, as follows: In 1896, $24,078,936; in 1897, $23,151,926. Of these amounts, $122,955 in 1896 and $156,215 in 1897 were shipped from the consular district of Frankfort to the United States.

According to the export returns of this office, the value of the different kinds of paper exported from this consular district during the year 1898 was as follows:

Photographic paper	$101,466
Colored paper	68,054
Transfer paper	6,828
Glazed paper	3,285
Fancy paper	1,530
Wood pulp	1,244

PAPER PUBLICATIONS.

Publications relative to the manufacture of paper can be obtained by application to the following address by prepaying cost of book: Güntter-Staib, Biberach am Riss, Wurttemberg.

Kirchners Technologie der Papier Fabrikation; price, $2.

Annuaire de la Papeterie Universelle by Ch. Lhomme; price, $1.50.

Dahlheim Taschenbuch für den Praktischen Papierfabrikanten; price, $2.

Karten der Papier Pappen und Papierstofffabriken Deutschlands; price, $2.25.

Karte der Französichen Papierfabrikation, by Chaignaud; price, $1.50.

Karte der Skandinavischen und Finnischen Papier Pappen und Papierstoff Fabriken, by C. F. Bandelin; price, $1.50.

Schubert Cellulosefabrikation; price, $1.80.

Kirchners Technologie, as well as the Chart of the German Paper Manufacturers, can only be obtained by subscribers to the Wochenblatt der Papierfabrikation, at Biberach am Riss, Wurttemberg, a weekly newspaper devoted to the paper trade. At the address given for German publications can be obtained a book entitled Adressbuch der Papier und Papierstoff Fabriken von Güntter-Steib, in which the addresses of all paper and pulp manufacturers in Germany can be learned, as well as the dealers in rags and advertisements of chemical firms; etc., that might be valuable to the American manufacturer.

Another paper periodical of Germany is the Papier-Zeitung, Carl Hofman, Berlin, W.

TRANSPORTATION.

The average cost of transportation of 10,000 kilograms (22,046 pounds) of rags from Frankfort to paper mills that buy in the city is $12.50. Wood is purchased at paper factories free of all charges for freight at prices already indicated; but, owing to the great number of places from which it is shipped to the factories of this district, it is not practicable to give cost of transportation to mills.

The rate on paper from factories in this district to Frankfort varies according to the distance, the rate from Aschaffenburg being the highest, and from Offenbach the lowest. Paper made from straw or wood pulp, printed paper, and colored paper pay higher freight rate than paper waste, which belongs to class 2.

Rate per 100 kilograms (220.46 pounds).

Frankfort to—	100 kilograms.	5,000 kilograms.	10,000 kilograms.
Aschaffenburg:	*Cents.*	*Cents.*	*Cents.*
First-class	15	7	5
Second class	15	5	4
Offenbach:			
First class	6	3	2
Second class	6	2	2

Neither wood nor pulp is imported by the factories at Aschaffenburg; but some of the factories nearer the Rhine have purchased these articles from Scandinavia during the last two years.

Wood can only be imported when sent from Scandinavia by shipload, and, as ocean and river rates depend upon time of year, amount of freight to be carried, and size of shipment, the rate of transportation for wood can not be given. Pulp costs from 15 to 17 cents per 100 kilograms from Rotterdam to Frankfort, which is the cheapest route, and from 2 to 3 cents per 100 kilograms for large shipments of from 300 to 500 tons.

All classes of paper cost from 15 to 17 cents per 100 kilograms from Rotterdam to Frankfort by boat and 12 cents per 100 kilograms for shipments of over 5,000 kilograms (11,023 pounds).

Rags are the only materials used in the manufacture of paper that are exported from this district, and they are only sent by river, the cost of transport being from 15 to 17 cents to Antwerp or Rotterdam and about 17 cents from port of shipment to New York.

Paper is generally exported from this district by water, the rate being the same as for imported paper.

DEAN B. MASON,
Vice and Deputy Consul-General.

FRANKFORT, *January 10, 1899.*

GLAUCHAU.

There are no paper manufactories in my consular district.

In regard to the course to be pursued in order to build up the export of paper, pulp, etc., from the United States to this district, I give below a few suggestions.

OUTLOOK FOR AMERICAN TRADE.

The American manufacturer must at the outset find himself confronted by the disadvantage of not knowing his customers, their business methods, their business standing, or their requirements. Therefore, let him deal with the export houses until he can establish direct relations with the foreign market. But he must create a demand for his goods on the export house by advertising, and perhaps through agents, catalogues, etc. Eventually, it will pay him to have in the foreign market a reliable agent familiar with the people, their ways and habits and language, and thoroughly posted in his business and possessed of the faculty of making friends. Such a man might be found, qualified to act for several houses in different lines cooperating in the investigation, thus minimizing the expense. Seeking foreign business by means of circulars and catalogues, frequently so imperfectly translated into the language of the country as to be unintelligible, is a waste of money if not supplemented with more direct efforts. Five minutes' talk, with a line of samples to back it up, is worth five years' correspondence. Advertising in export journals will help to familiarize people with the various grades, and is good for the purpose of fortifying the work of the local agents. When the manufacturer has decided to enter a foreign market direct, it is considered better to have one good agent in each city in place of one man for the whole country.

Attention must be bestowed on the price and quality of the goods. American manufacturers should not fall into the error of assuming that goods made for their own market will sell anywhere. German manufacturers avoid this error. Goods, of no matter what kind, should always be suited to the requirements.

Goods sent to foreign markets, more especially at the outset of business relations, should invariably be precisely what they are represented to be. Failure on this score furnishes an excuse for demanding additional discounts and evading payment, causes unpleasant friction, and oftentimes results in loss.

The terms of sale are a vital point. The manufacturer who wants cash in advance or even on consignment for his goods will find it very difficult to trade direct. Americans who have tried to do business on this basis, when the exporters of other countries give from one to six and sometimes even nine months' credit, have naturally failed. Credit is an essential factor in foreign transactions, and no business can be done without it. If American manufacturers do not see their way to give credit, they will not do much trade in this market. Nobody will buy and pay cash in advance. That system will never work in this country.

When catalogues must be sent, the price list, in the foreign terms of currency, should accompany them, and the discount should be given. More than this, the prices should not be quoted at the factory, as they generally are, but free on board vessel. Unless the circulars are intelligibly printed in the language of the country, they are useless.

GEO. SAWTER,
GLAUCHAU, *January 11, 1899.* *Consul.*

HAMBURG.

The population of Hamburg is 675,351, according to the latest statistics.

SIZES.

Paper is used for all domestic purposes, and for export. There are no industries peculiar to the country requiring paper in this district.

The sizes of writing paper are specified as follows, in centimeters (1 centimeter=0.3937 inch):

Reichskanzler:	
Cut	33 by 42
Not cut	34 by 43
No. 3	36 by 45
No. 4	38 by 48
No. 5	40 by 50
No. 6	42 by 53
Kanzlei	33 by 42
Royal	34 by 43
Register	40 by 50
Median	44 by 56
Imperial	57 by 78
Olifant	67.5 by 108.2

PRODUCTION AND CONSUMPTION.

Six hundred thousand tons of paper and pasteboard were made in Germany and consumed as follows (statistics for Hamburg district proper not obtainable):

Consumed—	Quantity.	Per cent.
	Tons.	
For exportation	90,000	15
For newspapers, periodicals, and books	250,000	41.67
Commercial, industrial, and private consumers	160,000	26.567
Schools, churches, and official institutions	100,000	16.66

There are eight leading paper firms, companies, and brokers in Hamburg: L. Apel, Ed. Hadeler, Ferd. Flinsch, Julius Post, Waldemar Prömmel, Sieler & Vogel, Latendorf & Scharlau, Aug. Schauenburg.

The total number of printers and publishers in Hamburg is 127, but the statistics do not specify the number of printers and the number of publishers, giving only the total of the two branches combined.

The following figures show that the consumption of paper is likely to increase:

Country.	Consumption.			
	1886.	1888.	1890.	1892.
Germany	$19,159,000	$21,477,000	$21,705,600	$22,414,800
Austria-Hungary	5,045,600	5,426,400	5,854,800	6,878,200

The nationalities dominating the paper trade can be seen from the statistics of import.

OUTLOOK FOR AMERICAN TRADE.

The United States would meet with strong competition as follows: Germany and England in writing paper and cheap imitations of high-grade paper; England in high-grade fancy paper; Austria in fancy paper; Germany and Sweden in printing paper (newspapers, periodicals, and book printing).

There are no paper manufactories in this consular district, or facilities for making paper machinery.

It is held by those who are actively engaged with the home and export paper trade in Hamburg that the United States can successfully compete with the German trade only when our manufacturers are compelled to sell their overproduction, and they seem to prefer to put this overproduction in the hands of one or two London firms, who sell the goods far under the standard value, instead of offering the same systematically, if only a little under the actual trade prices, to English and German consumers. It is claimed also that American manufacturers can not compete in this country, on account of the high German duty on importations. The German tariff is a safeguard to the paper industry.

Concerning reexportation, there is certainly a good business to be done through the medium of Hamburg paper firms, if the producers in the United States would comply with the requirements of the different markets. The regular 2 per cent off for cash after thirty days is not accepted by American manufacturers, these insisting upon cash against shipping documents in New York. This is not popular here, and few will agree to buy on such terms. Requirements such as bales fit for transportation by mules, seaworthy packing, pressed bales, etc., are also not met by American manufacturers. The high freight rates from New York to Hamburg and from Hamburg to the different ports of destination on nonpressed bales are great obstacles to our business; also the circumstance that we do not supply seaworthy bales, but use expensive boxes (on which the freight is higher) or burlap, which is very thick, but not strong and tough.

It is claimed that the United States manufacturers do not endeavor to meet the foreign requirements, but that they want consumers here to adopt their modes and methods. It is also stated that, if made in large quantities, the printing paper is not properly assorted, but second and third grades are mixed together, thus decreasing the value of the entire lot. Pressing wrinkles and thick knots are also said to spoil large lots of goods. Such sheets ought to be taken out; it is claimed, however, that many manufacturers refuse to do it.

There are other facts which greatly interfere with the American paper reexport trade in Hamburg. For instance, the duty on paper at the different ports of destination generally equals the value of the paper itself; notwithstanding that, there are cases where American manufacturers have delivered an overweight of 25 per cent and more, for which they made no charge on the invoice, believing that in this manner they are treating their customers here more cordially. They do not realize that this overweight is exactly what makes the paper of so much less value for newspaper printers, as a certain number of the newspapers or periodicals are to cover a certain post-office weight; and if the paper is 25 per cent heavier, it is evident that but few newspaper printers can use it, the postage on the heavier paper being too high. The American producer does not realize that this overweight, for which he made no charge at all, makes the paper about 40 to 50 per cent dearer, in any case, on account of the higher duty and freight charges, not to mention the penalties which are likely to be inflicted by the custom-house authorities at the different ports of destination. Buyers here claim that, with but few exceptions, the American factories produce chiefly the so-called "thick" paper; this means 24 by 36 inches, 45 pounds to the 500 sheets and heavier yet. The principal demand for reexportation is 24 by 36 inches, 23 to 45 pounds to the 500 sheets.

PRICES.

Ordinary printing paper is now sold at 18 marks ($4.28) per 100 kilograms (220.46 pounds); fine writing paper, at 32 marks ($7.61) per 100 kilograms, including the bale, pressed in linen bales of 200 kilograms, trimmed with wooden strips and iron hoops.

FREIGHT RATES.

Rates of freight by rail.

[The rates are given per 100 kilograms; for carloads, deduct 20 per cent. They are for pressed bales. Other packing will be charged at higher rates.]

Hamburg to—	Rate.		Hamburg to—	Rate.	
	Marks.			*Marks.*	
Aix la Chapelle	4.40	$1.0472	Aalborg	3.81	$0.9076
Amsterdam	3.85	.9263	Augsburg	6.19	1.4732
Baden-Baden	5.80	1.3804	Bamberg	5.15	1.2257
Basel	6.76	1.6088	Baireuth	5.17	1.234
Berlin	2.96	.7044	Bielefeld	2.96	.7044
Brunswick	2.21	.5254	Bremen	1.40	.3332
Breslau	5.29	1.259	Bromberg	5.35	1.2733
Budapest	10.73	2.5537	Cassel	3.47	.8258
Crefeld	3.99	.943	Cologne	4.29	1.021
Danzig	5.91	1.4065	Darmstadt	4.99	1.1873
Dessau	3.24	.8711	Dortmund	3.54	.8211
Düsseldorf	3.82	.9091	Elberfeld	3.81	.9088
Frankfort-on-the-Main	4.80	1.1434	Frankfort-on-the-Oder	3.68	.8758
Fürth	5.41	1.2875	Gotha	3.88	.9234
Hadersleben	2.67	.6354	Hanover	2.06	.4902
Karlsruhe	5.59	1.3304	Königsberg	6.70	1.5946
Leipzig	3.69	.8782	Mannheim	5.31	1.2637
Munich	6.50	1.547	Münster, in Westphalia	2.89	.6878
Nuremberg	5.45	1.2971	Offenbach	4.76	1.1328
Snabrück	2.44	.5806	Prague	6.10	1.4518
Spandau	2.92	.6979	Stendal	2.17	.5164
Stralsund	2.81	.6687	Strassburg	6.29	1.497
Stuttgart	6.19	1.4732	Teplitz	5.20	1.2376
Trier	5.28	1.2564	Warnemünde	2.26	.5358
Wesel	3.58	.852	Vienna	8.55	2.0349
Wiesbaden	5.08	1.209	Wismar	1.58	.376
Würzburg	4.84	1.1519	Zurich	9.22	2.9043
Zernitz	2.20	.5236			

IMPORTS AND EXPORTS.

Imports into Germany (figures for Hamburg proper not obtainable) in 1897.

Description.	Holland.	Belgium.	England.	France.	Norway.	Austria.
Rags and other material (not specified)	$32,000	$70,000	(*)	....	$183,000	$65,000
Printing paper for newspapers, periodicals, and books	6,400	12,000	$51,000	....	995,000	40,000
High-grade fancy paper	95,000	....	995,000	$30,000	22,000	727,000
Pasteboards	21,000	53,000	....	....	152,000	....
Wall paper	32,900	44,000	70,000	....	(*)	....
Fancy paper, such as New Year cards, etc	....	....	130,000	30,000	....	....
Cigarette paper	....	....	166,000	21,000	....	....
Colored paper	....	....	14,000	11,000	....	....
Wrapping papers	14,000	19,000	....	....	84,000	32,000
Blotting paper (white and colored)	10,000	15,000	109,000	16,000	....	17,500
Cheap imitations of high-grade paper	45,000	5,500	207,000	43,000	28,009	112,000

* Not given.

Exports from Germany (no statistics for Hamburg district proper obtainable) in 1893 and 1897.

From Germany to—	1897.	1893.
Colon	$33,500	$7,500
China (will be considerably more in 1898–99)	53,000	40,000
India (French territory)	700	400
Japan	567,000	175,000
British East Indies	200,000	150,000
Dutch East Indies	210,000	159,000
Philippine Islands	103,000	109,000
Siam	5,000	3,000
Egypt	95,000	86,000
Algiers	500	....
Madagascar	283,000	167,000
Argentine	182,000	178,000
Bolivia	8,000	4,000
Brazil	715,000	619,000
Chile	180,000	232,000
Ecuador	35,000	27,000
Guatemala	16,000	Not given.
British Guiana	10,800	Not given.
Canada (chiefly consigned to Quebec, Montreal, and Halifax)	81,000	7,000
Cuba	55,000	101,000
Mexico	120,000	104,000
Nicaragua	108,000	Not given.
Peru	4,700	3,000
Uruguay	10,000	8,700

Exports from Germany (statistics for Hamburg not obtainable) in 1897.

Description.	Belgium.	Denmark.	France.	England.	Italy.
Rags and other raw material for paper manufacturing	$42,000	$14,000	$722,000	$541,000	$206,000
Fly, emery, and polishing paper	27,000	12,000	......	......	31,000
Wrapping paper:					
Rough	98,000	11,000	9,000	470,000	34,000
Smooth	121,000	5,000	4,500	530,000	9,000
Photographic paper	32,000	17,000	41,000	122,000	49,900
Paper for copying purposes	31,000	5,000	7,000	10,000	52,000
Writing paper	42,000	72,900	22,000	132,000	9,000
Printing paper	31,000	15,000	47,000	810,000	152,000
Paper not specified	96,000	52,000	74,000	490,000	44,000
Wall paper	84,000	31,000	80,000	32,000	27,000
Cigarette paper	......	......	......	......	2,000
Papier-maché articles	......	......	......	640,000	57,000
Colored paper	232,000	132,500	209,000	121,000	19,600

Description.	Holland.	Norway.	Austria.	Russia.	Sweden.
Rags and other raw material for paper manufacturing	$252,000	......	$115,000	$692,000	$26,000
Fly, emery, and polishing paper	......	$6,000	92,000	31,000	6,000
Wrapping paper:					
Rough	113,000	13,000	36,000	......	53,000
Smooth	......	......	90,000	......	41,000
Photographic paper	40,000	......	130,000	9,700	4,500
Paper for copying purposes	30,000	30,000	19,000	......	3,000
Writing paper	66,000	31,000	......	......	20,000
Printing paper	203,000	30,000	18,000	......	38,000
Paper not specified	142,000	74,000	15,000	60,000	47,000
Wall paper	30,000	64,000	61,000	11,000	9,000
Cigarette paper	23,000	......	......	84,000	......
Papier-maché articles	73,000	25,000	171,000	105.000	......
Colored paper	84,000	......	......	......	......

HUGH PITCAIRN,
Consul.

HAMBURG, *January 17, 1899.*

MAGDEBURG.

Upon investigation, I have found that there are no manufacturers of paper of any kind in this consular district. However, I found a comprehensive work, recently published, that contains all the information that anybody can possibly desire upon the subject of manufacture of paper. This work is in two volumes, large quarto size, and contains 1,770 pages. The title of it is Praktisches Handbuch der Papierfabrikation (Practical Handbook of the Manufacture of Paper), Von Carl Hofman, Verlag der (published by) Papierzeitung, Berlin, W.

HENRY W. DIEDERICH,
Consul.

MAGDEBURG, *February 17, 1899.*

MAINZ.

In this district, there is one large factory—the Kostheimer Zellulose Fabrik—which makes a specialty of packing paper made of wood pulp and imitation parchment. It manufactures only first qualities, varying in weight from 18 grams to 160 grams per square meter (10.76 square feet).

Usual terms of sale are three months or 2 per cent off for cash.

The consumption of paper is constantly increasing.

Coal is chiefly used for fuel and costs about 18 cents per cwt.

Cellulose and wood fiber are chiefly used in the manufacture of paper—sometimes cellulose alone, sometimes mixed with wood fiber.

Paper-making machinery is imported.

Wages in a paper mill average 3 marks (71.4 cents) per day.

Steam power is used. Paper is machine made. The most modern methods are employed. They are constantly improving, and the production is increasing.

From Sweden, tissue paper is imported.

Packing paper and tissue paper are exported. Export is chiefly to China, Japan, and America.

WALTER SCHUMANN,
Consul.

MAINZ, *March 7, 1899.*

NUREMBERG.

POPULATION.

Nuremberg is situated in about the middle of Bavaria, and is the second largest city of this Kingdom. Its present population is estimated to be 230,000 inhabitants. Other cities of some size in this consular district are:

	Inhabitants.
Würzburg	68,714
Fürth	46,443
Baireuth	27,693
Erlangen	20,891
Amberg	20,230
Ansbach	15,881

The Kingdom of Bavaria has an area of 29,292 square miles, and, according to the last census of December 1, 1895, a population of 5,818,544 inhabitants.

PRODUCTION.

There are but few paper mills and cardboard factories within this consular district. They are small concerns and satisfy mostly local demands, as, for instance, one of them makes a specialty of wrappers for tobacco factories in this and other cities of Bavaria.

The following is a list of the paper mills and cardboard and wood-pulp factories within this consular district:

PAPER MILLS.

Ph. I. Loschge, in Stein, near Nuremberg.

Fried. Stepff, in Wendelstein (straw and packing paper).

Eugen Lehnhoff and L. Rosenthal, in Röthenbach, near Nuremberg. Both make tobacco wrappers, handmade paper, and cardboard.

Machinenpapierfabrik, in Forchheim.

Papierfabrik, in Münster-Schwarzach; colored paper and cardboard.

Ulrich Langheinrich, in Baireuth.

CARDBOARD FACTORIES.

Kurtz & Zanders, in Wendelstein.

I. B. Prinstner, in Beilngries.

D. Neuburger, in Nuremberg.

W. Eberhard, in Feuerbach near Kitzingen.

Joh. Trötsch, in Erlangen.

Georg Nic. Meyer, in Burgthann.

J. Windorfer & Co., in Harras.

WOOD-PULP FACTORIES.

Holzstoff-fabrik, in Windisch-Eschenbach.

Weissmann & Felsenstein, in Neumühle-Erlangen.

PAPIER-MACHÉ-GOODS FACTORY.

I. P. Hahn, in Nuremberg.

The principal wholesale dealers and importers of paper, etc., in this consular district are:

M. Weinberg's Nachfolger, in Nuremberg.

C. Müller, in Nuremberg.

F. C. Poesch, in Nuremberg.

Gebrüder Voit, in Nuremberg.

Winkler & Schorn, in Nuremberg.

M. Ellern, in Fürth.

Georg Farnbacher, in Fürth.

Gebrüder Ichenhaeuser, in Fürth.

Leonh. Tripps, Baireuth.

CONSUMPTION AND PRICES.

Large concerns, however, buy direct from the paper mills; for instance, the W. Tümmel'sche Buch und Kunstdruckerei in this city, the largest newspaper printing office within this consular district, buys direct from German paper mills. The price of this paper is $2.4395 per German cwt. (110.23 pounds avoirdupois), free delivered into the printing office. The rolls, however, must be of a certain length, otherwise the printer has the right to a rebate; this rebate plays no unimportant part in the price of the paper, as, if latter is thick, the correct weight might certainly be delivered, but not the correct length. They have but lately bought two linotype machines from Boston at a cost of $3,000 each, and brought this fact to the attention of their readers in a pamphlet setting forth the superiority of these American machines.

The factory of Ernest Nister, the largest publisher of Christmas cards, calendars, picture books, transfer pictures, etc., in southern Germany, is also located in this city. He employs 700 workmen, and his consumption of paper amounts to about $125,000 per year. The bulk thereof is of German make.

There are other publishers and decalcomania manufacturers in this city, most of whom buy direct from the paper mills. The following is a list of the principal ones:

Publishers, lithographic printers.—Carl Mayer's Kunstanstalt, Fritz Schneller & Co., Wolfrum & Hauptmann, Georg Brunner, S. Goldschmidt, Ritter & Kloeden.

Decalcomania factories.—C. A. Pocher; Huber, Jordan & Koerner; Troeger & Bücking, Carl Schimpf, I. G. Martin, Tacuber & Geck.

FUEL AND MACHINERY.

Wood is mostly used in the manufacture of paper; rags and other waste material are also employed.

The fuel used is chiefly the cheap Bohemian brown coal.

There is very little undeveloped water power in this country.

All the machinery is of German make, mostly Saxon. The methods of manufacture are modern throughout, I understand, and both production and consumption are continually on the increase.

IMPORTS AND EXPORTS.

I am unable to furnish any statistics concerning imports and exports for this Kingdom, as Bavarian statistics are included in those of the German Empire.

The import of foreign paper into this consular district is very small, with the exception of such sorts of paper as can not be made in like good quality in Germany—as, for instance, American flint paper, which is largely used in the Nuremberg lead-pencil factories, has an immense sale; in fact, none but the American make is used in the pencil factories here.

Some years ago, coated (glazed) paper for price lists, catalogues, illustrations, etc., was much imported by the publishers here from the United States; but the same is now made in Germany, and the importation, therefore, has ceased.

Brown "parchment" paper is imported from France, and is sold here at 68 marks ($16.20) per ream of 500 sheets. It is used in the metal and gold-beating industry of this city and its neighborhood. This paper consists largely of waste from leather factories. It is made by only two French firms, situated near the leather-manufacturing district in France. One of them is the firm of Montgolfier frères, in Annonay.

Another kind imported from France is white parchment used for soap wrappers, the cost of which is 74 marks per 100 kilograms ($17.61 per 220.46 pounds), free delivered in Nuremberg. A similar kind is made in Germany, but, as the German makers have agreed not to sell it below a certain price, the French manufacturers try their utmost to undersell them.

English blotting paper is still largely imported, although the importation is said to be decreasing, as the German makers endeavor to equal the English article. Decalcomania paper for some finer grades of transfer pictures and paper made of alfa and esparto grass are also imported from England. Paper made of these fibers has the advantage of being very thick and yet comparatively light, which is of importance for exportation to countries where duty is assessed according to weight.

Some fancy paper, also the better quality of writing paper of English, French, and Austrian make, in cardboard boxes, as well as Japanese fancy-colored paper handkerchiefs and tissue paper, are sold here wholesale and retail, but not largely.

Beyond the above, very little foreign paper is imported into this district. From what I hear, I am led to believe that Nuremberg is not favorably located for the importation of American paper; it lies too far inland. Northern Germany offers better openings for the American paper trade. My informant, who knows the prices of American paper, told me that the paper makers in the United States, by reason of their excellent machines, can produce many kinds of paper even cheaper than the German makers; but the freight to an inland place like Nuremberg, the rates of which I quote below, is too high and, together with duty, prevents the possibility of American competition.

TRANSPORTATION.

Sea freight for all kinds of paper and cardboard from New York to Rotterdam or Hamburg is $11.90 per 100 cubic feet. Railroad freight from Hamburg to Nuremberg (delivered to depot only), for paper and cardboard, per 100 kilograms (220.46 pounds): For single packages, 5.90 marks ($1.40); collective freight, 5 marks ($1.19); paper only, for quantities of 5,000 kilograms, 4.80 marks ($1.14); cardboard, for quantities of 5,000 kilograms, 3.65 marks (87 cents)—plus about 5 cents per cwt. for dock cartage, etc. Rail from Rotterdam to Nuremberg, per 100 kilograms, single packages, 5.60 marks ($1.33); for quantities of 11,023 pounds, 4.20 marks ($1). Combined river and railroad route from Rotterdam to Nuremberg via Mainz (Rhine route), per 100 kilograms, 4.40 marks ($1.04) for quantities less than 11,023 pounds; 3.80 marks (90 cents) for quantities of 11,023 pounds and upwards.

SIGMUND DÜNKELSBÜHLER,
NUREMBERG, *February 18, 1899.* *Vice-Consul.*

STETTIN.

POPULATION.

The population of Stettin, according to the last census, was 150,192; present population is estimated at 155,000. The percentage of illiterates is very small, as for the past thirty years it has been compulsory to send children to school.

CONSUMPTION.

The local uses of paper are the same as in the United States, and there are no industries particularly requiring paper.

Ordinary flat writing, book, and catalogue paper of the s. and c., s. and s. c., and newspaper grades are in common use. Linen and enameled or plate paper are used very little.

As to writing paper, it can be divided into three classes, each class having its special quality and finish, as follows: First, the cheapest paper, of which wood forms the component part, is sold to the printer at 30 to 38 pfennigs (7 to 9 cents) per kilogram (2.2 pounds); second quality is free of wood pulp and sells at from 40 to 50 pfennigs (9.5 to 11.9 cents) per kilogram; third, the best quality, chiefly of rags, sells from 65 pfennigs to 1 mark (15.4 to 23.8 cents) per kilogram.

As to the sizes of German-made paper, they differ from our standard sizes of cap (14 by 17 inches), folio (17 by 22 inches), and royal

(19 by 24 inches). Below I submit the different sizes in centimeters and in inches; also the local names of each size.

Name.	Size.	
	Centimeters.	*Inches.*
German Government	33 by 42	12⅝ by 16
Writing	34 by 43	13 by 16½
Large writing	36 by 46	13¾ bv 17⅝
Large bishop	38 by 48	14½ by 18¾
Small medium	42 by 53	16⅛ by 20¾
Large medium	46 by 59	17⅝ by 22½
Small royal	48 by 64	18⅓ by 24½
Large royal	54 by 68	20⅝ by 26
Imperial	65 by 84	24⅞ by 32¼

All of the above sizes are furnished flat in "double;" for instance, "double writing" is 43 by 68 centimeters (16½ by 26 inches). For circular, book, and catalogue printing there are only three standard sizes, and, as in the case of writing paper, they differ from our regular sizes. I quote the sizes of book paper in centimeters and inches:

Centimeters.	Inches.
46 by 59	17⅝ by 22½
50 by 75	19⅛ by 25⅝
75 by 100	28⅝ by 38¼

The book paper is also divided into three classes and sells to publishers and printers as follows: No. 1, lowest grade, from 18 to 30 pfennigs (4.2 to 7.1 cents) per kilogram (2.2046 pounds); No. 2, good, from 36 to 50 pfennigs (8.5 to 11.9 cents) per kilogram; No. 3, best, from 62 pfennigs to 1 mark (14.7 to 23.8 cents) per kilogram.

The mills are perfectly willing to make paper in any size and weight required without additional expense.

Terms of sale are as follows: For writing papers, or general news and book papers, for which there is daily call, 2 per cent if paid within thirty days, or three months, net cash; for book paper, to be used for a special work which will not be completed for six or nine months, and upon which there can be no collection until finished, the time for payment is generally set by the printer or publisher (twelve months' credit will be given).

Stettin has but two firms of any importance dealing in paper, as follows:

Ewald Gentzersohn, Heumarkt.

Kinkel & Krause, Gr. Oderstrasse.

There are about 16 publications, 15 printers, and 10 publishers.

The consumption of paper is on the increase, but nine-tenths is of home manufacture. England formerly exported to this district, but that has practically ceased. Germany now exports to England considerable parchment paper. Linen, plate, and enameled papers are imported to a small extent. Tissue and roll drawing paper is almost exclusively of German manufacture.

PRODUCTION.

Stettin abounds in undeveloped water power, and has the additional advantage of every facility for transportation. Finland and Sweden export to Stettin annually about 4,500 tons of wood pulp and other paper stock. There are but two paper mills of any consequence in this locality: Papier Fabrik Alt Dam, at Alt Dam bei Stettin; Papier Fabrik Hohenkrug, at Hohenkrug bei Stettin.

There is an abundance of fuel. Coal (good quality) wholesales at 80 cents a centner,

I do not believe that the facilities for making paper machinery are of any importance, as considerable of such machinery is shipped from England. The cost of labor in paper mills is very low, 1.50 marks (35.7 cents) being paid to women and young men, while experienced labor receives 3 marks (71 cents) a day of twelve hours, allowing half an hour for morning lunch, one hour for dinner, and half an hour for afternoon lunch. Overtime is paid at the rate of 35 pfennigs (8.3 cents) per hour.

In reference to the quantities and values of local manufactured paper, I am unable to answer, the mills positively refusing to give me any information.

IMPORTS.

Linen paper, flat drawing or water color, and enameled papers are imported in small quantities. Linen paper wholesales, according to quality, from 30 pfennigs (7.1 cents) a pound up; enameled, from 40 pfennigs (9.5 cents) a pound. This is mostly imported from England.

BANKING, TELEGRAPH, AND DUTIES.

Banking, mail, and telegraphic facilities are very good between England and Germany.

The duty on printing, writing, and blotting paper is 10 marks ($2.38) per 100 kilograms.

OUTLOOK FOR AMERICAN TRADE.

The essential points in building up an export to this or, in fact, to any other German district would be to first comply with requirements as to size, then offer low prices with "long time."

I have been unable to find a sample catalogue, such as our dealers issue, and I am of the opinion that if a neat set of samples were prepared, say one book for each particular grade—such as writing, book, enameled and plate, blotting, covers, and cardboard—printed in German, giving different sizes and weights and price per kilogram (2.2046 pounds) f. o. b. New York, it would introduce our goods; and if the inquiries warranted, a representative might be sent with a view of establishing an agency, where small orders, of which there would be quite a number, could be promptly filled. In linen, enameled, and blotting papers, I feel confident that a business could be established if the articles are presented and sold in the manner and quantity to which they are accustomed. The introduction of new sizes or any innovations is not to be recommended.

JOHN E. KEHL,
Consul.

STETTIN, *February 8, 1899.*

STUTTGART.

POPULATION.

The total population of Wurttemberg, according to the census of December 2, 1895, was 2,081,151, and is now estimated to be 2,150,000 inhabitants. There is not a single person of sound mind over 10 years of age in Wurttemberg who can not read and write. The people are well trained for mechanical and industrial work. There are many cities and towns having factories for machinery, textile branches, paper manufacturing, etc.

CONSUMPTION.

The city of Stuttgart, being—next to Leipzig—the largest place in Europe for the production of books, periodicals, and newspapers, consumes an enormous quantity of paper. Besides this, Wurttemberg consumes large quantities of paper for packing, offices, bureau, paper ware, and private correspondence.

All sorts of paper are produced from the finest linen rags, as well as from these mixed with surrogates and cotton, from cellulose, bleached and unbleached, and from wood pulp.

All sorts of weights and quality are used, according to the purpose which the paper has to serve, from the cheapest to the finest qualities. On account of the limit of the weight of single letters to 15 grams (half an ounce), including envelope, for mercantile correspondence, more middle and light weight letter paper is used than heavy; for printing purposes, mostly double and quadruple folded paper is used; lately, large sizes are preferred, as larger cutting machines are in use.

The cheapest straw paper is sold at 110 marks ($26.18) per ton of 1,000 kilograms (2,204.6 pounds). Prices range up to 1,600 marks ($380.80) per ton for finest copper-printing and illustration paper. Paper is sold mostly on three months' credit or 2 per cent off if paid within thirty days—sometimes, six months' credit—and in the book trade one year's credit is given.

The quantities and values of papers consumed per year for the country can not be given even approximately, there being no statistics on the subject. The total number of paper manufactories in Wurttemberg is 43. There are no brokers for the paper trade, but some of the larger firms have agents in the city of Stuttgart.

The names of the principal manufactories are:

Papier Fabrik, Baienfurth.
Moritz Fleischer, in Eislingen.
Chr. Weiss & Co., Enzweihingen.
C. Bukh Söhn, Fauendan.
Mech. Papierfabrik, Goeuningen.
G. Krumm, Göppingen.
Gebr. Rauch, Heilbronn.
Gebr. Schamffelen, Heilbronn.
A. Bezner & Co., Kirchheim.
P. Lemppenan & Co., Neuenburg.
Gebr. Müller, Mochenwangen.
Papier Fabrick, Mockmuhl.
C. Schoufelen, Oberhemingen.
I. Krauss Erben, Pfullingen.
Gebr. Laiblin, Pfullingen.
Deutsche Verlags Anstall, Salach.
Papier & Fellstoff Fabriken, Unterkochen.
Pappen Fabrik, Uhingen.
Papier Fabrik, Wangen.

There are about 150 printing establishments for books, 100 for lithography, and 200 publishing firms in Wurttemberg. There are some 50 factories of paper ware, paper bags, envelopes, paper boxes, lamps, etc., and about 200 bookbinderies.

The chief articles manufactured are news paper and cheap printing paper, unbleached wood-pulp paper for paper bags and light wrapping paper, to the value of about 20,000,000 marks ($4,760,000) per annum.

The consumption of paper is slowly but steadily increasing.

England dominates the paper trade for fine correspondence and drawing paper, watman and blotting paper; Germany, for medium fine correspondence paper (median and billet size), but mostly for export through the paper dealers in London; France, for ornamented correspondence paper (coquille size); Austria-Hungary, Belgium, Switzerland, and Sweden send medium qualities.

PRODUCTION.

The fuel mostly in use is coal of the Saar and Ruhr region, costing 800 to 1,000 marks ($190.40 to $238) per 100 tons (of 2,200 pounds), according to quality. The principal place for the sale of coal is Mannheim, the coal being shipped there by water from Ruhrort and thence to Wurttemberg partly by water to Heilbronn and then by rail, or all rail. For coal trains, a specially low tariff exists. For paper making there are also used: (1) Pine and aspen trees for cellulose; (2) hop weeds, nettles, and esparto grass, the latter being imported from Africa; (3) linen and other rags, generally assorted by the rag dealers; also waste from spinneries and jute factories. The available quantities of each are amply sufficient for the demand of all the inland paper factories. The cost of these articles can not be obtained.

The facilities for rail transportation in Wurttemberg are very good. There is no water transportation.

There are factories in Heidenheim, Heilbronn, Reutlingen, Ravensburg, Goeppingen, and Stuttgart, where all the machinery for paper making is built, such as entire paper machines, calenders, boilers, satineering, and paper-cutting machines.

There are about 40 paper manufactories in Wurttemberg; their annual output can not be ascertained. They use mostly steam power, some steam and water power combined, very few water power alone.

Paper is made exclusively by machinery. The demand for hand-made paper is very small, and it can not compete with machine-made paper.

All manufacturers, including the producers of wood pulp, are anxious to obtain the newest inventions, not only to improve their products, but to increase their output.

WAGES.

The weekly wages in the paper factories in Wurttemberg are: For children under 16 years of age, 2½ to 3 marks (59.5 to 71 cents); for women, 6 to 8 marks ($1.43 to $1.90); for young men, 10 to 12 marks ($2.38 to $2.85); for older ones, 15 to 18 marks ($3.57 to $4.28); for special workmen, 20 to 30 marks ($4.76 to $7.14).

IMPORTS.

With very little exception, paper is not imported into this country, as the local production supplies the market; but, while much of this is lower priced than foreign paper, there is a great deal that could be exported from the United States at a profit. Some Japanese paper for napkins, etc., is imported as a specialty. From England some drawing paper is imported by dealers in Cologne, Hamburg, Leipzig, and Frankfort.

The banking facilities are the best possible. There is mail service three or four times a day.

In Wurttemberg there is not a single firm for the importation of paper exclusively.

Sweden has made efforts to introduce its wood pulp into Germany, but the duty of 8 marks ($1.90) per 100 kilograms (220.46 pounds) has been an obstacle to trade.

EXPORTS.

Medium and fine printing paper and correspondence and packing paper are exported from Wurttemberg. The prices range from 500 to 1,500 marks ($119 to $357) per ton of 1,000 kilograms (2,204.6 pounds), free on board ship at Hamburg or Bremen. The shipments are mostly made through paper dealers in London to South America, Bombay, and Africa, and direct to Russia, Turkey, Italy, Spain, and the Danubian principalities. The export of paper to the United States from this consular district is very small; in the calendar year 1898, it amounted to only $770.88 for printed paper and $541.71 for labels.

TRANSPORTATION.

To the eastern countries, regular steamship lines run from two to four times a month from German, Italian, and Austrian ports. To North, South, and Central America, various steamship lines run from North German, English, Belgian, and Dutch ports; also, from Genoa.

The cost of transportation from domestic points of origin to mills in Wurttemberg can not be given, as it depends on the distance; and every mill would have to be applied to for this information and would probably refuse to give it.

Rates of transportation from the ports of entry at Bremen or Hamburg to Stuttgart are:

Class.	Per 220.46 pounds.		In carloads of 11,023 pounds.		In carloads of 22,046 pounds.	
	Marks.		*Marks.*		*Marks.*	
Rags	5.53	$1.32	2.38	$0.566	1.54	$0.366
Pulp						
Jute			3.35	.797	2.38	.566
Paper			4.53	1.08	4.00	.95
Pasteboard			3.35	.797	3.03	.72

By water from Rotterdam to Mannheim, thence by rail to Stuttgart, the rates are:

Class.	Per 220.46 pounds.		In carloads of 11,023 pounds.		In carloads of 22,046 pounds.	
	Marks.	*Cents.*	*Marks.*	*Cents.*	*Marks.*	*Cents.*
Rags	2.50	60	1.50	35.7	1.30	30.9
Pulp						
Jute			1.70	40.4	1.50	35.7
Paper			2.00	47.6	1.80	42.8
Pasteboard			1.70	40.4	1.60	38

EDWARD H. OZMUN,
Consul.

STUTTGART, *March 21, 1899.*

GREECE.

ATHENS.

POPULATION.

According to the last census (1896), the population of this consular district, which includes Athens and Piræus, was 183,000, and the present estimate of the population is 200,000. There are no statistics or other means of learning what the percentage of illiterates is. The people have mechanical traits, and may become skillful in the production of paper.

CONSUMPTION.

The following table, which shows the quantity of paper imported into Greece annually, the different kinds used, tariff thereon, etc., answers many of the questions relating to the consumption of paper in this country:

Class or kind.	Imports.	Tariff.		Whence imported.
	Tons.	*Drachmas.*		
Tarred, emery, glass	60	22	$4.25	Germany, France, and Belgium.
Blue and gray (small and large sheets), cardboard, tape.	1,450	22	4.25	Austria, Italy, and Germany.
Printing:				
No. 1, unglazed	350	22	4.25	Austria, Belgium, and Germany.
No. 2, glazed	395	32	6.18	Do.
No. 3, news paper	350	11	2.12	Denmark and Germany.
No. 4, writing	175	105	20.27	France, Italy, Germany, Austria, and some from England.
Blank book, drawing, and copy book.	245	55 105	10.52 20.27	Germany, France, Austria, and Italy.
Unglazed writing	125	32	6.18	Italy, Austria, France, and Germany.
Glazed writing	60	43	8.30	Do.
Blotting, wrapping	310	22	4.25	Austria and Germany.
Bookbinding	190	32	6.18	Do.
Bank note	8 to 10	170	32.81	England and France.
Total	3,720			

An increase of from 5 to 10 per cent may be looked for annually.

The market prices of paper vary considerably in Greece, but at present they are as follows per 100 kilograms (220.46 pounds), the prices quoted being payable in gold, for paper delivered in the harbor of Piræus, the importer paying the tariff in addition:

	Francs.	
White print (according to quality)	24 to 27=	$4.63 to $5.21
Wrapping paper made of straw	15=	2.90
Wrapping paper made of cellulose	16 to 18=	3.09 to 3.47
News paper	25=	4.83
Writing paper	30 to 70=	5.79 to 13.51

Most of the writing paper is imported in large sheets as printing paper, to avoid the high tariff fixed for the former, and cut up into proper sizes after it is received here.

The terms of sale are three to six months' credit, time drafts being sent, with the bills of lading, to local banks for collection.

About 4,000,000 kilograms (8,818,400 pounds) of paper are consumed in Greece annually, of which 1,500,000 kilograms (3,306,900 pounds) are produced by local factories, and the balance imported from the countries named in the foregoing table, Austria dominating the trade. The relative importance of the other countries in this line is denoted by the order in which they are mentioned—Germany, France, Belgium, Denmark, England, and Italy.

There are two paper factories in Phaleron, a village lying between Athens and Piræus, on Phaleron Bay, which manufacture coarse papers only, such as wrapping paper, blotting paper, etc. In Athens there are 6 firms that deal in paper, and about 50 paper brokers. The three principal paper dealers, mentioned in the rank of their importance, are Tzakonas, Autoniades, and Dimitriades—all of Athens.

Greece boasts of over 100 newspapers, many of which are dailies, and about 5,000 pamphlets, and from 1,500 to 2,000 books are printed by her people annually. In addition, the necessary blanks for her Government and business men are printed here. Greece has over 700 journeymen printers, about 150 publishers, and 50 bookbinderies.

A large quantity of paper is used in the local manufacture of cigarettes; but there is no way of learning the exact quantity thus used or the number of cigarettes made. Greece manufactures no articles from either paper or pulp; but the prospects are that the consumption of paper will increase rapidly in this country in the near future.

PRODUCTION, WAGES, FUEL, ETC.

As stated, there are but two paper manufactories in Greece. According to reliable information, no water power, either developed or undeveloped, exists in this district, there being no large streams that flow all the year.

Raw materials suitable for paper making are found in Greece, but in very limited quantities. They consist of pine for pulp, straw, rags, cellulose, and china clay. The means of transportation and cost to manufacturers of these local materials, I have been unable to learn.

The wages of employees in the local paper factories are from 3 to 5 drachmas (39 to 65 cents) per day.

About 1,500,000 kilograms (3,306,900 pounds) of coarse paper are manufactured annually by the two local factories, but they have not been running long. They use steam power, and the paper is machine made. The processes and methods of manufacture are modern, and the production is likely to increase. There are no pulp mills in Greece.

The fuel used by these factories is either coal or coke, both of which are imported. The prices, on the docks at Piræus, are as follows: Coal (mostly Cardiff), 40 drachmas (about $5.30) per ton of 2,240 pounds; coke, nearly twice that amount per ton—all payable three months after delivery. Charcoal, local and Turkish, and not of the best qualities, sells at the same place for about 125 drachmas (about $15.60) per 100 okes (284 pounds).

IMPORTS, BANKING, STEAMSHIP LINES, ETC.

The classes and kinds of paper imported into Greece are shown by the foregoing table, as are also the countries from which paper is imported; but the amounts from the several countries could not be learned.

The banking facilities are considered very good. Greece has a number of reliable banks that have financial connections with all of the leading countries of the world. Although Greece belongs to the International Postal Union, its mail facilities are not very regular or reliable; but the Government promises a reform in that direction at no distant day. Neither is its telegraph service of the best. It is connected with the outside world by cable.

There are several regular lines of steamships between Piræus and different European cities, and in from fifteen to forty days from the date an order is sent to such ports the goods may be expected; but there is often more or less needless delay. There are no express lines. Small packages may be sent by "parcel post" in less time than by freight.

OUTLOOK FOR AMERICAN TRADE.

German and Belgian firms have established depots for their imports in Athens, in which samples are exhibited, and which assist in building up their trade very materially. To promote trade here, the United States, through some of its export associations, should adopt a similar plan. There certainly is an opening for American paper and pulp in Greece, but there is little use in trying to introduce our products through local firms. Live Americans should be sent here with samples of our best products and kept on the ground until the trade has been secured. Let the right men be sent with power to act, and there will be little doubt of the United States securing a large share of Grecian trade.

There are a number of local establishments which are anxious to deal with American firms in the paper trade, provided they be given suitable terms. Some of these firms are no doubt reliable; but my advice is to send Americans here who can speak modern Greek or French to introduce goods and open the trade on a firm basis—in the American way and with the American push.

EXPORTS.

Greece exports no paper.

TRANSPORTATION.

All imported goods reach Greece by water. Transportation rates from different European centers to Piræus are as follows, the rates being by the ton and payable in gold:

	Francs.*	
From London	26=	$5.02
From Antwerp	21=	4.05
From Hamburg	24 to 25=	$4.63 to 4.83
From Trieste	18=	3.47
From cities in Italy	18 to 20=	3.47 to 3.86

LACK OF STATISTICS.

As there are no publications to assist in collecting data for such a report as this, information given has been gathered after a long and tedious search from one place to another, with often contradictory answers; but I think it is quite reliable, though coming from many sources.

DANIEL E. McGINLEY,
Consul.

ATHENS, *May 25, 1899.*

PATRAS.

The population of this district is approximately 1,200,000, and the percentage of illiterates is about 60.

These people have no natural mechanical abilities, nor do they attempt to overcome this defect by education.

CONSUMPTION.

The principal uses of paper are for the publication of the daily and weekly journals and for the wrapping up of articles of merchandise. There are no industries peculiar to the country requiring paper or pulp. The very cheapest grades of paper are required to supply the demand for the various purposes.

Such small quantities of paper are consumed and the paper is purchased in such an irregular manner that it is quite impossible to ascertain the market prices for the different kinds in use.

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*The value of the Greek paper money varies considerably. At present, $1 equals nearly 8 drachmas.

There are no paper firms or companies, sales being made through commercial agents.

About 25 daily and weekly newspapers are published in this district. All are small in size and have a circulation averaging 2,000 copies each.

The consumption of paper in publications is likely to increase gradually.

The Greek nationality dominates the trade.

PRODUCTION.

There is considerable water power, which is undeveloped; but, owing to the mountainous nature of the country, much of it is quite isolated and not available without a large expenditure of capital. There are, approximately, 300 flour, wine, and olive-oil mills operated by water power.

Greece is quite destitute of wood for either fuel or paper making, and it is doubtful if rags, grasses, or waste materials for the manufacture of paper could be secured in sufficient quantities to be of value.

There are no mills for the manufacture of paper or pulp here, nor are any materials to be found which would be of use in the production of paper.

IMPORTS.

The cheaper grades of paper for stationery and newspaper work are imported mainly from Austria, Germany, and Italy; the demand for higher grades is insignificant.

Banking facilities are excellent, quite equal to any in Europe. Mail facilities are not good, the service being irregular; at present, two mails out and two in are scheduled each week via Brindisi. Telegraph facilities are good.

Austria and Germany control the import trade, Italy and France being next in importance.

Apparently, there is little opportunity for American trade in paper in this district, owing to the competition of a factory in northern Greece, fostered by a protective tariff, and to the long time on which purchases are made and the lack of security furnished by the purchaser. The small quantity consumed is insufficient to induce the American merchant to sell at the price offered by the near-by producer.

At the present writing, it is doubtful if any country is progressing satisfactorily with its exports to this district. Currency is depreciated, and trade is so conducted that profits are necessarily small; and, as the risks are great, the advisability of building up American exports under existing conditions is doubtful.

There are no exports of paper or pulp from this district.

GENERAL.

All merchandise (paper included) is brought to Greece by water. The Austrian, Greek, and British ships carry the bulk of the cargoes. There are several regular lines of steamships and a large number of tramp ships which visit the ports in this consular district.

CUSTOMS DUTIES ON PAPER.

The following are the duties levied on paper imported into Greece:

		Cents.
Writing paper:		
Unglazed	per pound	3
Glazed	do	5⅛
Wrapping paper	do	1¾
News paper, unprinted	do	1
Common white (pad)	do	2¼
Pasteboard	do	2¾

All printed matter is admitted free of duty.

ALONZO C. YATES,
Consul.

PATRAS, *January 21, 1899.*

ITALY.

CATANIA.

After being much delayed by the slowness of the paper dealers in complying with my request for samples and prices of paper, I have finally been told that they are ready to receive samples and quotations; but they do not care to state the present cost. They seem distrustful of the use to which the information would be put, and, as the publishers referred me to the dealers, I am unable to give current prices.

POPULATION.

The population of this consular district is estimated at 1,250,000. It is doubtful if an official census has ever been taken. The last one of this city (in 1881) gave the population at 103,000; it is now officially estimated at 124,000. The percentage of illiterates is placed at between 60 and 70. One of the odd and interesting sights to a stranger visiting the city is the groups of men of from 40 to 100 each on the wide walk facing the sea, listening to readings by one of their number, who is compensated for his labor by a collection taken after the reading is completed. Each auditor is expected to contribute at least 1 solda (about 1 cent in United States money).

CONSUMPTION AND PRODUCTION.

Someone has said that "the consumption of paper is a measure of a people's culture." The truth of this is fully proven in this community. The only daily—in fact, the only paper published, daily or weekly—Il Carriere di Catania, is a four-page sheet, 22 by 33 inches, which claims a circulation of but 3,000 copies.

The consumption of wrapping paper is proportionately small. The custom of wrapping every parcel, as is done in the United States, does not prevail. If a purchase is made at the bakery, meat or fish market, a fruit stand, or at most of the provision stores, and one wants the goods wrapped, the custom is for the buyer to take paper with him—usually an old newspaper or sheets from children's copy books. These are used as long as they will hold together. Paper is considered an expensive luxury, and no greater consumption can be expected as long as the masses earn but a bare existence.

There is no likelihood of Sicily ever becoming a producer of paper, there being no raw material or water power and coal being very expensive. The present price of steam coal is about $7 per ton (2,240 pounds), f. o. b. bunkers, shipboard.

An industry requiring large quantities of paper is the orange and lemon trade, in which tissue is used for wrapping the fruit and lining boxes. All of this now comes from northern Italy. One of the largest shippers of fruit told me the price he paid was about 4½ cents per pound, delivered.

IMPORTS, DUTIES, DEALERS, ETC.

The amount of paper received at this port in 1897 (last statistics available), including paper, printed matter, books, music, and lithographs, was as follows:

Country.	Value.	
	Lire.	
Austria-Hungary	39,651.20	$7,335
France	21,703.90	4,015
Germany	11,740.85	2,172
England	9,760.80	1,806
Greece and Malta	253.20	48
United States and Canada	35.20	6
Holland	355.20	66
Italian ports	433,644.55	80,224
All others	7,439.35	1,376
Total	524,584.25	97,048

The import duties per 100 kilograms (220.46 pounds), expressed in lire (1 lira=19.3 cents), are as follows:

Articles.	General.		Conventional.	
	Lire.		*Lire.*	
Wood pulp, for use in manufacture of paper	Free.		Free.	
Other pulp, including straw pulp:				
50 per cent water	2.00	$0.38	0.50	$0.09
Dry	2.00	.38	1.00	.19
Paper:				
White or colored—				
Unruled, any quality	15.00	2.89	12.50	2.41
Austria-Hungary and Germany, wrapping, one side calendered			5.00	.96
Ruled	20.00	3.86	20.00	3.86
Envelope and writing	25.00	4.82	25.00	4.82
Colored, gilt, or painted for lithographic, photographic, or draftsman's uses	45.00	8.68	40.00	7.72
Blotting	15.00	2.89	15.00	2.89
Wrapping (manila and straw)	8.00	1.54	3.00	.57
Playing cards (100 decks)	40.00	7.72	40.00	7.72
Printed posters, lithographs, and printed cards	100.00	19.20	75.00	14.47
Binders' board:				
Without sizing or finish	8.00	1.54	2.00	.38
Covered (same rate as the paper with which it is covered).				
Articles manufactured from paper and strawboard	80.00	15.44	80.00	15.44
Austria-Hungary and Germany, paper buttons and kindred goods			50.00	9.65
Strawboard, cut and folded for articles of manufacture	20.00	3.86	14.00	2.70
Books:				
Printed—				
In Italian, unbound (same as paper from which manufactured).				
Other languages, unbound	Free.		Free.	
Bound in any manner	20.00	3.86	20.00	3.86
Blank—				
Unbound	25.00	4.82	22.00	4.24
Bound	40.00	7.72	40.00	7.72
Music:				
Printed, unbound	Free.		Free.	
Bound	20.00	3.86	20.00	3.86
Manuscripts	Free.		Free.	

Imports from the United States come under the same rates as those from Austria-Hungary and Germany.

The octroi duties assessed by the city of Catania are as follows per 100 kilograms:

	Lire (paper).
Wall paper	15.00=$2.76
Writing paper	5.00= .93
Wrapping paper	1.50= .28
Board, B. and straw	3.00= .56

The paper lira is at a discount of about 7½ per cent compared with the coin currency of Italy.

The wholesale paper dealers are Nicola Jovanne E figli and

Michele Messina fu Carmela, both of Catania; and the principal printers of the city are Enrico Panzera Galátola and S. Di Mattei & Co.

I am of the opinion that a large trade could be developed in manila sacks from one-fourth of a pound up to the size used for flour. This useful article is entirely unknown here. I explained their convenience to the dealers, and they were much interested and expressed the wish to have samples and prices sent them. Quotations should be f. o. b. Catania and based on the Italian lira (19.3 cents).

ALEXANDER HEINGARTNER,
Consul.

CATANIA, *March 4, 1899.*

FLORENCE.

POPULATION.

The total population of Florence, according to the latest census (December 31, 1881), was 164,460, and the present population is 199,193. The percentage of illiterates is 417 per thousand. The traits of the people are artistic rather than mechanical.

CONSUMPTION.

Most of the paper used in Government offices is hand made; machine paper is employed in commercial offices; coarse straw paper, not light, is commonly used in every shop, all such paper being of local production. The paper is of rather an inferior quality—cheap, heavy, and easily torn—in comparison with paper of foreign production.

As to size, it does not vary from that of foreign paper; but Italians are not familiar with large oblong envelopes, all documents and letters being folded in quarto.

The number of paper firms, companies, or brokers is 22.

The leading paper firms here are:

Giovanni Cosimo Cini, San Marcello Pistoiese.

Giuseppe Civelli, Chiacavalle and Chiusi.

Sebastiano Magnani, Pescia (Lucca).

Cesare Volpini, Pistoia.

The total number of printers is 50; the publishers number 18.

The consumption of paper is on the increase. Germany ranks first in the exportation of paper to Italy, followed by Austria, France, and England, respectively.

PRODUCTION.

There is not a large supply of water power in this consular district.

Only two paper mills are deserving of mention—one belonging to the firm Cesare Volpini, founded at Gello, Pistoia, in 1740, and the other to the firm Giovanni Cosimo Cini, in the commune of Piteglio, established in 1820.

Volpini's mill is best known for handmade paper for home consumption. One hundred hands are employed there, most of them in the manufacture of paper for the press and wrapping paper. There is a drum machine in the mill, with two large vats, run by a steam engine of 30 horsepower, for the boiling of rags, and starting, in case of need, an auxiliary motor, whenever, through lack of water, the hydraulic motor of 35 horsepower does not run.

Cini's mill gives permanent work to 110 hands; but often they number 250 hands, as follows: Adult males, 137; adult females, 95; boys, 12; girls, 6. They are thus distributed: Foremen, 7; machine tenders, 25; ordinary hands—males, 105; females, 95; boys, 12; girls, 6. The wages paid them, per diem of ten hours, average as follows: Foremen, from 50 to 60 cents; machine tenders, 40 to 50 cents; ordinary hands—males, 30 to 35 cents; females, 12 to 15 cents; boys, 10 to 12 cents; girls, 6 to 8 cents.

Cini's mill produces writing, printing, and packing paper to the aggregate value of $160,000 per annum.

The quantity is estimated at about 20,000 quintals (44,092 pounds). The mill is fitted with 3 steam boilers, 85 horsepower, for heating purposes and boiling rags, 13 hydraulic motors of 200 horsepower, and 3 engines.

The machinery is of English, German, and French construction.

The yearly quantity of rags consumed is calculated at 5,000 quintals (11,023 pounds) and valued at from $3 to $4 per quintal, according to the kind and color of rags. Pulp is made mostly from white poplar and silver fir; next comes falasco, which is straw or grass. Rags are used less than any other material.

A project now under consideration, which promises to be a great success, especially if backed by American capital and developed by American machinery, is the maceration of olive leaves for pulp in the manufacture of the best and strongest paper yet produced. So far, no details are known.

IMPORTS FROM AND EXPORTS TO THE UNITED STATES.

For the calendar year 1897, the following data are given, embracing the whole Kingdom (no invoices for paper have ever been produced at this consulate):

Articles.	Imports from the United States.		Exports to the United States.	
	Quantity.	Value.	Quantity.	Value.
	*Quintals.**		*Quintals.**	
Rags, mixed	130	$2,000	785	$2,600
Paper:				
Not ruled	29	400	481	6,800
Ruled			140	2,400
Wrapping	52	200	98	400
Cartoons:				
Fine			19	400
Ordinary	124	400		
Cellulose	1,001	6,000		
Total	1,336	9,000	1,523	12,600

* 1 quintal=220.46 pounds.

GENERAL IMPORTS.

In the year 1897, the imports of the aforesaid articles amounted to $2,864,221 and the exports to $2,150,447, there being an excess of imports over exports of $713,774. Of "paper" alone, 26,428 quintals, valued at $305,460, were imported and 94,618 quintals, estimated at $882,280, exported—the former exceeding the latter by $576,820.

The following table gives the principal articles of import and export and the leading countries in the trade, during the year 1897, for the entire Kingdom:

Description.	Imports.	Exports.
Rags:		
Great Britain	$5,849	$2,982
France	79,328	4,734
Austria	6,704	
Cellulose:		
Austria	524,964	
Germany	230,154	
Belgium	44,478	
Pulp:		
Austria	74,538	
Germany	21,171	
Paper:		
Not ruled—		
Germany	46,365	
Austria	29,940	109,606
Argentine Republic		163,142
Egypt		59,248
Uruguay		36,036
Brazil		34,636
Turkey		32,480
Ruled—		
Argentine Republic		20,060
Brazil		7,939
Central America		7,977
Wrapping paper:		
Germany	31,180	
Egypt		98,800

IMPORT AND EXPORT DUTIES.

The import duties or tariffs on each class of goods are the following, per quintal (220.46 pounds):

Rags of all kinds	Free.
Paste (pulp) of wood:	
Cellulose	Free.
Other, including straw paste, or similar substances—	
Wet	$0.096
Dry	.193
Paper:	
White or tinted paste—	
Not ruled, of all qualities	2.42
Ruled	3.86
Envelopes, shape	4.82
Colored, gilt, or painted or figured, including whitened paper for lithographs or photographs	7.72
Blotting paper, not to be understood all kinds of paper without glue	2.89
Coarse paper for packing and straw paper not tinted or glazed	.58

The export duty on rags of all kinds is $1.70 per quintal (220.46 pounds).

Under Category X, "paper and books," in the Italian tariff, are classified rags, cellulose, paste, paper, and books of every kind.

TRANSPORTATION.

The two leading Tuscan paper mills are about 7 miles distant from the railway station of Pracchia, which is halfway between Florence and Bologna.

From the plants to the depot, or vice versa, the goods are usually drawn by mules, and a load of 6 or 8 tons of goods is taken at the rate of $3.40 per ton.

The railway tariff, by slow freight, per ton and per mile, is as follows:

	Cents.
Class A (for rags, wood for pulp, ground wood, and other fibers)	1.91
Class B:	
For fine paper	4.41
For printing paper	3.28
For wrapping paper	2.3

EDWARD C. CRAMER,
Consul.

FLORENCE, *February 19, 1899.*

MILAN.

POPULATION.

The population of this consular district (census of December 31, 1881) was 3,961,616, and according to the official estimate of December 31, 1897, 4,271,761. The population of the city of Milan (census of December 31, 1881) was 321,839, and according to the official returns of December 31, 1898, it was 481,279. This includes the garrison of soldiers, viz, 6,816.

ILLITERATES.

Illiterates per 100 inhabitants, without regard to age, by the census of December 31, 1871, were: Males, 67.04 per cent; females, 78.94 per cent; average, 72.99. According to the census of December 31, 1881, it was: Males, 61.03 per cent; females, 73.51 per cent; average, 67.27. The following table shows the illiterates per 100 married people and per 100 enlisted men in the army and navy from 1871 to 1897:

Year.	Married.			Army and navy.		
	Men.	Women.	Average.	Army.	Navy.	Average.
1871 *	57.73	76.73	67.23	56.74	68.52	62.13
1872	56.22	75.28	65.75	56.53	69.81	63.17
1873	56.48	75.65	66.06	54.24	66.8	60.52
1874	54.48	74.37	64.43	52.62	69.27	60.44
1875	54.32	74.76	64.54	51.8	64.98	58.39
1876	52.35	72.95	62.65	51.99	69.73	60.86
1877	51.78	72.69	62.23	51.39	72.36	61.87
1878	48.49	70.07	59.28	49.86	68.11	58.98
1879	48.08	70.25	59.16	49.24	65.07	57.15
1880	45.94	67.99	56.97	48.88	66.1	57.49
1881	48.24	69.9	59.07	47.74	60.27	54
1882	46.68	68.19	57.43	47.11	61.12	54.11
1883	45.79	67.56	56.67	47.96	60.05	54
1884	44.97	66.65	55.81	47.22	61.91	59.56
1885	44.28	65.56	54.92	46.32	58.39	55.32
1886	43.16	63.47	53.31	44.42	53.15	51.28
1887	42.83	62.82	52.83	44.98	51.72	48.35
1888	42.27	61.9	52.08	42.98	51.46	47.22
1889	41.21	60.45	50.83	42.04	44.24	43.14
1890	41.37	60.13	50.75	41.1	39	40.05
1891	41.12	59.16	50.14	40.25	41.41	40.83
1892	40.24	58.1	49.17	39.66	43.75	41.7
1893	38.97	56.43	47.71	39.64	47.48	43.56
1894	38.87	55.71	47.29	38.94	45.91	42.42
1895	37.92	53.83	45.88	38.34	42.92	40.63
1896	36.96	52.57	44.76	....	49.55	....

* The year 1871 does not include the province of Rome.

The percentage given for the army in 1871 refers to the men born in 1851; that for 1872 refers to the men born in 1852; and so on. The percentage given for the navy in 1871 refers to the men born in 1850; that for 1872 refers to the men born in 1851; and so on. The reason for this difference is that the levy for the army is made at the twentieth year, while that for the navy is made at the twenty-first year. As to higher education, the following list of students enrolled in the universities and the higher institutions of learning in the Kingdom, for the scholastic year 1897–98, shows an increase of 3,728 over the corresponding period of 1893–94:

Jurisprudence	6,513
Notary and procurator	843
Medicine and surgery	6,878
Obstetrics	1,585
Mathematics	570
Engineering	1,185
Physics	130
Chemistry	208
Natural sciences	436
Letters and philosophy	1,639
Chemistry and pharmacy	354
Pharmacy	2,675
Applied engineering	1,338
Veterinary	924
Agriculture	302
Total	25,598

PAPER MILLS IN ITALY.

There are in Italy 396 paper mills, employing 11,176 laborers, as follows: Men, 5,556; women, 4,659;.and children of both sexes, 961. There are 12 pulp mills, employing 360 laborers, as follows: Men, 279; women, 63; and children of both sexes, 18. There are also 16 paper mills with machinery attached for the manufacture of wood pulp, employing 4,230 laborers, as follows: Men, 2;099; women, 1,837; and children of both sexes, 294. This makes a total of 424 mills in the paper industry, employing 15,766 laborers. These mills have 25,764 horsepower—steam, 5,771; electricity, 1,075; and water, 18,918. They use 216 tanks for hand work, 169 continuous machines, and 220 cylinder machines for the manufacture of paper, and 65 machines and 207 presses of 4,740 horsepower, 139 rotary, and 42 "autoclavi" for the boiling, in the preparation of the wood pulp.

MANUFACTURE OF PAPER IN MILAN DISTRICT.

As to whether the "people have mechanical traits so as to become producers of paper," I would refer to the following statistics of the paper industry, which will also answer many of the questions propounded in regard to the production, uses, etc., of paper in Italy.

There were 12 paper mills in 1818 in the province of Milan, employing 100 laborers. Six of these, with 48 laborers, were in Milan; 1, with 20 laborers, at Vaprio d'Adda; 2, with 16 laborers, at Villa San Fiorano; and 1 at Peregallo, 1 at Rocca Brivio, and 1 at Zibido San Giacomo, employing altogether 22 laborers. In 1850, there were only 9 mills—6 at Milan, 2 at Monza, and 1 at Vaprio d'Adda. These were all handmills, excepting the one at Vaprio d'Adda, where machinery was used. This latter employed 50 men, 20 children of both sexes under 15 years of age, and 50 women, and produced with two machines printing and official paper, note paper, and tinted paper for lithographs. The other 8 mills—worked by hand—employed 32 men, 24 children of both sexes under 15 years of age, and 12 women, and manufactured, with 12 tanks, yellow and blue paper, wrapping paper, and rough cardboards. In 1864, there were 8 mills; 3 of these used machinery and the other 5 were for hand work. The latter manufactured the most ordinary kinds of yellow paper for wrapping purposes and rough cardboards for making boxes used in silkworm culture. In 1876, there were again 9 mills, as follows: One at Briosco, employing 22 men, 15 women, and 6 children of both sexes under 15 years old, using 2 tanks, 1 machine, and having as motor water of 40 horsepower; 1 at Vaprio d'Adda, employing 120 men, 150 women, and 100 children of both sexes under 15 years old. This mill had 4 tanks, 2 machines, and the motor was both steam and water, the former of 50 horsepower and the latter of 150 horsepower. The other two mills, at Milan, employed 256 men, 413 women, and 100 children of both sexes under 15 years old. They had 11 tanks and 2 machines, and their motor was water of 179 horsepower. In 1893, the paper mills were reduced to 4—the smaller handmills having been abandoned—located as follows: One at Briosco, employing 10 men, 6 women, and 7 children, with 2 tanks for hand work, 1 machine, and the motor both steam and water, the former of 20 horsepower and the latter of 30 horsepower; 1 at Vaprio d'Adda, employing 111 men, 171 women, and 50 children, with 2 machines, and the motor both steam and water, the former of 40 horsepower and the latter of 110 horsepower. The other 2 mills were at Milan; they employed 223 men, 400 women, and 137 children. They used 4 machines, and the motor was steam and water, the former of 50 horsepower and the latter of 177 horsepower. The children employed in the above mills were under 15 years of age. The mill at Vaprio d'Adda made fine, glazed, and colored cardboard; the mills at Milan made letter and printing paper, gelatin paper, cardboard (both fine and coarse), and glazed and colored paper; while the mill at Briosco made packing and similar paper, also small colored cardboards.

The above statistics were taken from a work by Dr. Sabbatini, published in 1893, and are no doubt to be relied upon. Dr. Sabbatini mentions the authorities from which he collected his statistics, but it hardly seems necessary for me to repeat them.

I have been unable to find statistics for all the provinces in this consular district as far back as 1818.

There are at the present time in this district, according to the annual statistics on agriculture, industry, and commerce published in 1898, 77 paper mills, 1 pulp mill, and 2 mills that make both paper and pulp. The names of the proprietors and the location of the mills are as follows:

Location.	Names of proprietors.
PAPER MILLS.	
Province of Bergamo.	
Alzano di Sopra	Pigna Paolo.
Alzano Maggiore	Cliviti Antonio & Co., Pigna Paolo.
Nembro	Pesenti Carlo & Fratelli.
Tagliuno	Cima Giulio Bruno.
Province of Brescia.	
Caino	Comini Silvestro, Cristofolini Giuseppe, Sristofolini Pietro, Gennari Luigi.
Maderno	Bonaspetti Antonio & Fratelli, Franceschini Andrea & Fratelli, Franceschini Pietro & Fratelli, Mafizzoli Andrea, Mafizzoli Fratelli di Giuseppe.
Nave	Bertoldi Paolo, Comini Celestino (2 mills). Emmer Fratelli, Giustacchini Angelo, Pernis Cesare, Turinelli Giovanni.
Toscolano	Avanzini Giovanni Battista, Fossati Andrea, Mafizzoli Pietro, Simonelli Luigi & Fratelli, Visintini Fratelli fu Domenico, Zuanelli & Co., Zuanelli Giovanni Battista.
Province of Como.	
Acquate	Cima Giovanni Battista.
Besozzo	Andreoli & Co.
Brebbia	Andreoli & Co., Binda Pietro.
Castello Sopra Lecco	Cima Giosue & Figli.
Cernobbio	Ferrario & Della Torre.
Como	Andreoli & Co.
Consiglio di Rumo	Fumagalli Giosia.
Dervio	Ghezzi Renato, Signorell Carlo, Stoppa Giuseppe, Vitali Dionigi & Fratelli.
Ferrera di Varese	Torri Giove.
Gemonio	Fasana Fratelli.
Gravadona	Vitali Battista, Cima Francesco.
Lonate Ceppino	Ganziani, Vita Enrico & Fratelli.
Mandello del Lario	Gaviglio Giuseppe.
Maslianico	Carcano Carlo & Fratelli, Faverio Carlo fu Pietro, Favini Luigi, Ferrario Francesco.
Nesso	Lucca Gaetano, Pusinelli Giuseppe.
Piazza Santo Stefano	Favini Luigi, gia Carcano Germano, Favini Luigi.
Ponte Lambro	Lucca Achille & Fratelli, Villa Carlo & Fratelli.
Ronago	Stoppa Enrico & Achille.
Trevisago	Fasana Fratelli.
Varese	Paolo Andrea Molina.
Province of Cremona.	
Spinadesco	Morandi Andrea.

Location.	Names of proprietors.
Province of Milan.[*]	
Milano	Binda, A. C., Bagrelli & Co.
Vaprio d'Adda	Binda & Co.
Province of Parma.	
Cortile San Martino	Veroni & Figlio.
San Lazzaro Parmense	Cavalieri Desiderio, Pernis Urbano, Veroni Giuseppe & Figlio (2 mills).
Vigatto	Bozzani Guglielmo.
Province of Piacenza.	
Ponte dell'Olio	Ganeva Guido.
Vigolzone	Calandroni Pietro, Provesi Ottavio, Ratti Costante.
Province of Sondrio.	
Cosio Valtellino	Della Torre Fratelli.
PULP MILLS.	
Province of Bergamo.	
Credaro	Molina Paolo Andrea.
MILLS—PAPER AND PULP COMBINED.	
Province of Bergamo.	
Zogno	Sgherlino Giuseppe.

[*] Although there are only 3 paper mills in this province at the present time, as against 12 in 1818, 9 in 1850, 8 in 1864, 9 in 1876, and 4 in 1893, the paper business has not decreased; only the small handmills have disappeared. The 12 mills in 1818 employed 100 laborers, while the 3 mills at the present day employ 850.

As stated previously, there are, in this consular district, 77 paper mills, 1 pulp mill, and 2 paper mills with machinery attached for the manufacture of wood pulp. The manufacture of paper is controlled by Italians.

The following table will convey more explicit information:

Paper mills in the consular district of Milan.

Location.	Number of mills.	Motors.				Number of hand tanks.	Number of paper machines.		Number of autoclavi for the boiling.		Number of laborers.					Average number of working-days per year.
		Steam.		Water.							Males.		Females.			
		Number.	Horse-power.	Number.	Horse-power.		Continuous.	Cylinder.	Rotary.	Stationary.	Adults.	Children under 15 years.	Adults.	Children under 15 years.	Total.	
Bergamo	6	6	76	13	190	....	3	2	5	....	89	19	93	25	226	232
Brescia	23	....	....	73	591	11	3	9	4	....	164	3	227	30	424	229
Como	33	15	201	56	436	9	18	15	10	6	491	59	363	40	953	283
Cremona	1	....	....	1	6	1	....	1	....	....	3	....	....	4	7	280
Milano	3	4	80	16	295	....	5	1	13	....	331	27	452	40	850	280
Parma	6	....	....	11	23	....	....	6	....	....	17	....	21	....	38	220
Piacenza	4	....	....	8	28	4	....	....	....	....	12	....	9	....	41	214
Sondrio	1	....	....	3	9	....	....	1	....	....	4	....	3	7	14	200
Total	77	25	375	181	1,578	24	29	35	32	6	1,111	108	1,168	146	2,553	....

PULP MILL.

This is at Bergamo and has one water motor of 150 horsepower, 2 machines for the preparation of the pulp, 14 presses with 140 horsepower, and employs 15 men, who work about two hundred days in the year.

PULP AND PAPER MILLS.

There is a pulp and paper mill at Bergamo, with 1 water motor of 40 horsepower, 1 cylinder machine for paper, and 3 machines of 40 horsepower for preparing the wood pulp. It employs 56 men, 7 women, and 1 girl, who work two hundred and seventy days per year. The other mill is at Milan, with motor (water) of 60 horsepower, 1 continuous machine for paper, 4 machines for wood pulp, and 3 presses (50 horsepower). It employs 28 men, 14 women, and 1 girl, who work two hundred and seventy-nine days in the year.

WAGES.

The following tables show the wages paid by some of the largest mills in this district and in other parts of Italy.

Wages paid in 1896 by A. Binda & Co., of Milan.

Operatives and class of work.	Wages per day.	
	Lire.	*Cents.*
Rag pickers.		
Females:		
Highest	1.50	29
Lowest	1.00	19
Boys (average)	.50	9
Workers on continuous machines.		
Males:		
Highest	3.75	72
Lowest	1.50	29
Preparers of the pulp.		
Males:		
Highest	2.75	53
Lowest	1.60	30
Females:		
Highest	1.75	33
Lowest	1.00	19.3
Workers on cylinders.		
Males:		
Highest	3.00	57
Lowest	2.00	38
Workers on calenders.		
Males:		
Highest	2.25	43
Lowest	1.50	29
Porters (average)	1.70	32
Other females:		
Highest	1.50	29
Lowest	1.00	19.3
Boys and girls	.60	11

Wages paid in 1896 by Ettore Finzi, of Maglio di Goito, province of Mantua.

Operatives and class of work.	Highest.		Lowest.	
	Lire.	*Cents.*	*Lire.*	*Cents.*
Managers of paper machines	3.30	63	2.50	48
Submanagers of paper machines	2.50	48	2.50	48
Managers of the cylinders	2.00	38	2.00	38
Submanagers of the cylinders	1.75	33	1.75	33
Assistants to managers of the cylinders	1.60	30	1.60	30
Paper cutters	1.75	33	1.60	30
Packers (by contract)	2.25	43	1.90	36
Smiths	2.00	38	2.00	38
Carpenters	2.50	48	2.00	38
Workers on the millstones and the porters	1.75	33	1.60	30
Overseers	3.00	57		
Firemen	2.00	38	2.00	38
The more skilled workers in sorting of paper	1.25	24	1.00	19.3
Common workers in sorting of paper	.80	15	.60	11
Boys under 15 years of age	.80	15	.65	12
Girls under 15 years of age	.80	15	.65	12

Wages paid in 1896 by Nodari Bernardo, of Lugo di Vicenza, province of Vincenza.

Operatives and class of work.	Wages per day.	
	Lire.	*Cents.*
Porters	1.50	29
Rag workers:		
Laborers over 18 years old (contract labor)	1.50	29
Females over 18 years old (contract labor)	1.50	29
Females (old)	2.00	38
Preparers of the pulp (over 18 years old):		
Highest	2.00	38
Lowest	1.30	25
Makers of the paper:		
Highest	3.50	67
Lowest	1.30	25
Paper dressers:		
Children (subject to the laws)—		
Males	.50	9
Males and females	.80	15
Children under 15 years of age—		
Males	1.00	19
Females	.90	17
Laborers:		
Males—		
Highest	2.50	48
Lowest	1.50	29
Females—		
Highest	1.50	29
Lowest	1.10	21
Females (contract labor)—		
Highest	1.70	32
Lowest	1.30	25
Men who do the repairing:		
Highest	4.00	77
Lowest	1.70	32

Wages paid in 1896 by Societa Anonima "Cartiera Italiana," of Serravalle Sesia, province of Novara.

Operatives and class of work.	Wages per day.	
	Lire.	*Cents.*
Rag workers:		
Males over 25 years old	2.28	44
Females—		
From 18 to 25 years old	1.50	29
Over 25 years old	1.80	34
Females (contract labor)—		
18 to 25 years old	2.05	39
Over 25 yeas old	2.20	42
Preparers of the paste, males:		
From 18 to 25 years old	1.65	31
Over 25 years old	2.27	43
Paper makers (males):		
From 18 to 25 years old	1.80	34
Over 25 years old	2.60	50
Paper dressers:		
Males—		
From 10 to 12 years old	.60	11
From 12 to 18 years old	1.30	25
From 18 to 25 years old	1.70	32
Over 25 years old	2.30	44
Females—		
From 10 to 12 years old	.60	11
From 12 to 18 years old	1.30	25
From 18 to 25 years old	1.50	29
Over 25 years old	1.85	35
Females (contract labor)—		
From 18 to 25 years old	2.00	38
Over 25 years old	2.28	44
Envelope makers:		
Females—		
From 12 to 18 years old	1.30	25
From 18 to 25 years old	1.45	28
Over 25 years old	1.50	29
Females (contract labor)—		
12 to 18 years old	1.30	25
18 to 25 years old	1.50	29
Over 25 years old	1.60	30
Men who do the repairing:		
From 12 to 18 years old	1.65	31
From 18 to 25 years old	2.30	44
Over 25 years old	4.15	80

The above tables show the wages paid in 1896, and the following table shows the average wages paid by Societa Anomina Cartiera Italiana, of Serravalle Sesia, from 1870 to 1898:

Wages.

Year.	Males.										Females.			
	Rag workers.		Pulp workers.		Paper makers.		Paper dressers.		General re-pairers.		Paper dressers.		Envelope makers.	
	Lire.	*Cents.*	*Lire.*	*Cents.*	*Lire.*	*Cents.*	*Lire.*	*Cents.*	*Lire.*	*Cents.*	*Lire.*	*Cents.*	*Lire.*	*Cents.*
1871	1.21	23	1.32	25	1.32	25	1.32	25	1.76	33	0.88	16	0.66	12
1872	1.21	23	1.32	25	1.32	25	1.32	25	1.98	38	.88	16	.66	12
1873	1.43	27	1.43	27	1.43	27	1.43	27	1.98	38	.99	19	.66	12
1874	1.54	29	1.54	29	1.65	31	1.54	29	1.98	38	1.10	21	1.10	21
1875	1.54	29	1.54	29	1.65	31	1.54	29	1.98	38	1.10	21	1.10	21
1876	1.54	29	1.54	29	1.65	31	1.54	29	2.09	40	1.10	21	1.10	21
1877	1.54	29	1.54	29	1.65	31	1.54	29	2.09	40	1.10	21	1.10	21
1878	1.54	29	1.54	29	1.65	31	1.54	29	2.20	42	1.10	21	1.10	21
1879	1.65	31	1.65	31	1.76	33	1.65	31	2.20	42	1.10	21	1.10	21
1880	1.65	31	1.65	31	1.76	33	1.65	31	2.75	53	1.10	21	1.10	21
1881	1.65	31	1.65	31	1.76	33	1.65	31	2.75	53	1.10	21	1.10	21
1882	1.76	33	1.76	33	1.98	38	1.76	33	2.75	53	1.10	21	1.10	21
1883	1.76	33	1.76	33	1.98	38	1.76	33	3.30	63	1.10	21	1.10	21
1884	1.76	33	1.76	33	1.98	38	1.76	33	3.30	63	1.10	21	1.10	21
1885	1.76	33	1.76	33	1.98	38	1.76	33	3.30	63	1.10	21	1.10	21
1886	1.76	33	1.76	33	1.98	38	1.76	33	3.30	63	1.10	21	1.10	21
1887	1.98	38	1.98	38	2.20	42	1.98	38	3.63	70	1.21	23	1.21	23
1888	2.28	44	2.27	43	2.56	49	2.28	44	4.12	79	1.85	35	1.52	29
1889	2.28	44	2.27	43	2.56	49	2.28	44	4.12	79	1.85	35	1.52	29
1890	2.28	44	2.27	43	2.56	49	2.28	44	4.12	79	1.85	35	1.52	29
1891	2.28	44	2.27	43	2.56	49	2.28	44	4.12	79	1.85	35	1.52	29
1892	2.28	44	2.27	43	2.60	50	2.30	44	4.15	80	1.85	35	1.50	28
1893	2.28	44	2.27	43	2.60	50	2.30	44	4.15	80	1.85	35	1.50	28
1894	2.28	44	2.27	43	2.60	50	2.30	44	4.15	80	1.85	35	1.50	28
1895	2.28	44	2.27	43	2.60	50	2.30	44	4.15	80	1.85	35	1.50	28
1896	2.28	44	2.27	43	2.60	50	2.30	44	4.15	80	1.85	35	1.50	28
1897	2.28	44	2.30	44	2.60	50	2.32	45	4.20	81	1.85	35	1.55	30

PRODUCTION.

The production of the paper mills of Italy in 1862 (including the Pontifical State and the Trentino) was estimated at about 23,995 tons, from 59 machines and 687 vats. Of this amount, one-third was packing paper, one-third paper for writing and newspapers, and the other third paper of the finest quality for writing and for books. The value was estimated at $3,474. In 1878, the production was 54,800 tons, from 95 machines and 813 vats. In 1889, it was 70,000 tons, from 200 machines and 485 vats; and the following table shows the production and the value of same in 1896, from 389 machines and 216 vats. It also shows the different kinds and the quantity and value of each.

Quantity and value of paper manufactured in 1896.

Articles.	Quantity.	Value.
	Tons.	
White paper or tinted in pulp, any quality	50,000	$5,790,000
Light, thin paper, for copying, cigarettes, artificial flowers, and for packing limes, lemons, oranges, etc	3,000	878,500
Rough wrapping paper, not tinted nor glazed	3,000	752,700
Straw paper or pasteboard	10,000	386,000
Rough, ordinary cardboard	1,500	4,632
White paper or tinted in pulp, prepared or put up in packages or boxes, for letters or envelopes	30,000	1,621,200
Vegetable parchment paper	100	24,175
Bleached paper for chromos, lithographs, or engravings	1,500	260,550
Total	99,100	9,717,757

It is estimated that the production for the past two years has been 100,000 tons each year.

RAW MATERIALS USED.

The raw materials used in the manufacture of paper in Italy are rags, mechanical wood pulp, chemical wood pulp (cellulose), straw, hemp stalks, and a small quantity of esparto. Up to the year 1881, rags were placed by the customs authorities in two classes, viz, vegetable rags and rags of other kinds; but since that date they have been divided into three classes, viz, vegetable rags, animal rags, and mixed rags. Vegetable rags include linen, cotton, jute, and hemp. The so-called animal rags are really but little used in the manufacture of paper, although classed by the customs authorities among the paper-stock materials, but are principally used for making what is called mechanical wool; also as manure, especially for olive trees. The mixed rags are such as do not come in under the other two classes, and contain about two-thirds waste paper. The mechanical wood pulp is of rather recent date in Italy, and the production is about 10,000 tons yearly. The wood used in its manufacture is fir and poplar; and to obtain 1 quintal (220.46 pounds) of dry pulp, it takes about 2 quintals of fir and 3 quintals of poplar. The chemical wood pulp (cellulose) is nearly all imported, as there is only one cellulose mill in Italy, that of Von Willier & Co., at Romagnano Sesia. The proportion of cellulose used is one-fourth to three-fourths rags for news paper and one-third cellulose to two-thirds rags for other paper of good quality. As the wood pulps are used more and more, their importation must correspondingly increase, since Italy does not possess forests of suitable wood to supply the demand.

Next to vegetable rags, wheat straw is the most used, especially in the manufacture of wrapping paper and pasteboard; then come hemp stalks, and last esparto. I can find no class for this made by the customs authorities; but the table which shows the amount of raw material used in 1896 gives the amount used in Italy for that year. It is said to be very good paper stock and gives strong texture with a smooth surface. It grows in the coast countries of the Black Sea, in Tripoli, and in the south of Spain. There are, of course, other materials used in the manufacture of paper, such as lime, talc, stealite, baryta, etc., and, although to a certain extent found in parts of Italy, most of these substances are imported, but are not down in the statistics under paper materials as published by the customs authorities.

Amount of raw material used in 1896.

	Tons.
Vegetable rags	50,000
Mixed rags	10,000
Mechanical wood pulp	14,000
Chemical wood pulp (cellulose)	14,600
Straw	30,000
Hemp stalks	1,000
Esparto	300
Other material (for coloring, fecular, etc.)	55,000
Total	174,900

It is calculated that the above materials yield in paper about the following: Vegetable rags, 65 per cent; mixed rags, 60 per cent; mechanical wood pulp, 80 per cent; chemical wood pulp (cellulose), 85 per cent; straw, 50 per cent; hemp stalks, 30 per cent; esparto, 50 per cent; and the other materials, 40 per cent.

IMPORTS AND EXPORTS.

As the various tables in this report show, the wood pulps enter largely into the manufacture of paper in Italy, and their importation has become an important item—in fact, the most important in the paper industry—and the following tables are of interest.

Imports and exports of mechanical wood pulp, 1878–1898.

Year.	Imports.	Exports	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1878	316	....	1889	4,715	....
1879	544	5	1890	8,922	....
1880	590	....	1891	5,555	....
1881	824	....	1892	5,089	....
1882	617	....	1893	3,860	22
1883	1,585	....	1894	3,475	31
1884	6,393	....	1895	3,191	82
1885	6,995	....	1896	4,176	99
1886	7,097	....	1897	3,612	64
1887	5,310	37	1898	3,089	31
1888	4,462	....			

Imports and exports of chemical wood pulp (cellulose), 1886–1898.

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1886	1,794	....	1893	8,094	51
1887	3,282	108	1894	9,349	14
1888	3,760	22	1895	10,780	10
1889	6,477	....	1896	13,692	26
1890	4,039	53	1897	14,410	61
1891	6,843	....	1898	18,131	84
1892	7,128	....			

Notwithstanding the great increase in the use and importation of the wood pulps, straw and rags are still the chief factors used by the Italian mills in the manufacture of paper. For some reason, there has been a great decrease in the exportation of vegetable rags from Italy. This may be due to several causes—one, the export duty mentioned elsewhere in this report, and, another, the increase of the paper industry in the country. However, the increase of inhabitants should keep up the balance, supply home demands, and leave some for exportation. There are nearly 32,000,000 inhabitants in Italy, and it is calculated that each person adds yearly to the rag product some 2 kilograms (4.4092 pounds). That means that 64,000 tons of rags are produced in this country each year. In 1896, 50,000 tons of vegetable rags were used in the paper mills of the country, 10 tons were exported, and 289 tons imported (the latter, of course, included in the 50,000 tons used). Estimating the home production to be, as above stated, 64,000 tons, that leaves 14,279 tons unaccounted for.

Imports and exports of vegetable rags, 1871–1898.

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1871	....	15,024	1885	421	1,056
1872	....	12,537	1886	317	261
1873	....	12,146	1887	438	133
1874	....	10,944	1888	377	1,341
1875	....	7,992	1889	93	1,693
1876	....	6,949	1890	124	1,396
1877	....	9,638	1891	61	761
1878*	1,869	5,664	1892	29	690
1879*	1,862	7,579	1893	96	1,460
1880*	2,638	10,765	1894	34	52
1881	700	2,711	1895	144	2
1882	731	4,203	1896	289	10
1883	416	1,959	1897	345	67
1884	354	1,893	1898	160	96

* Rags of all kinds.

Imports and exports of mixed rags, 1881–1898.

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tors.*
1881	194	27	1890	337	981
1882	72	268	1891	301	42
1883	276	151	1892	253	402
1884	271	139	1893	407	133
1885	468	54	1894	839	57
1886	343	60	1895	714	3
1887	253	77	1896	508	39
1888	290	145	1897	324	115
1889	436	981	1898	305	98

The class noted as "paper, white or tinted in pulp, any quality," constitutes fully one-half of the yearly production of the Italian paper mills. The importation and exportation of this class (1871–1898) was as follows:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1871	818	1,644	1885	2,108	2,325
1872	904	1,462	1886	2,385	2,809
1873	877	4,021	1887	2,545	2.797
1874	797	1,435	1888	1,427	2.838
1875	885	1,625	1889	1.385	3.101
1876	736	1,109	1890	1,284	2,685
1877	726	2,324	1891	968	2.339
1878	640	1,946	1892	883	2,796
1879	677	2,701	1893	728	3,005
1880	642	2,947	1894	493	3,157
1881	714	2,644	1895	553	3,762
1882	868	2,867	1896	538	4,361
1883	1,560	2,953	1897	505	4,185
1884	1,533	2,678	1898	516	4,216

The greatest production, next to the above-mentioned class, is that noted as "packing paper, raw and rough, and straw paper not tinted nor glazed." This class constitutes nearly one-third of the Italian manufacture, and the importation and exportation (1871–1898) can be seen from the table below:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1871	394	2,917	1885	655	5,401
1872	223	3,308	1886	501	4,182
1873	358	4,131	1887	484	4,722
1874	484	3,713	1888	597	3,579
1875	611	3,479	1889	686	3,972
1876	642	3,461	1890	770	3,762
1877	564	4,009	1891	848	4,050
1878	565	3,966	1892	1,099	3,641
1879	523	4,484	1893	1,076	3,880
1880	561	4,536	1894	1,047	4,490
1881	913	4,933	1895	1,289	4,528
1882	973	5,201	1896	1,498	4,672
1883	790	5,314	1897	1,564	4,670
1884	694	5,128	1898	1,467	5,108

From 1871 to 1882, this last class included what has since 1882 been classed by the custom-house authorities as "blotting paper." The trade in blotting paper is not extensive, and that which is used here is a very poor article, especially if homemade. The old way of sanding is still quite common, possibly because it is cheaper.

Imports and exports of blotting paper, 1883–1898.

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1883	87	316	1891	20	3
1884	128	61	1892	16	11
1885	85	35	1893	18	4
1886	71	87	1894	15	19
1887	136	71	1895	23	1
1888	44	13	1896	22	2
1889	22	16	1897	17	4
1890	21	3	1898	19	....

In cardboards, both fine and ordinary, the importation and exportation is quite important, especially in the latter, where the importation far exceeds the exportation, as will be seen by the following table:

Imports and exports of cardboards, 1881–1898.

Year.	Ordinary cardboard.		Fine cardboard.	
	Imports.	Exports.	Imports.	Exports.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1881	919	287	90	26
1882	1,255	255	62	36
1883	2,090	215	144	141
1884	4,397	213	161	87
1885	5,151	71	177	60
1886	4,449	50	208	70
1887	5,389	42	241	102
1888	2,750	44	110	108
1889	3,155	112	86	175
1890	3,735	72	70	506
1891	4,104	33	91	183
1892	4,706	123	77	75
1893	3,954	111	80	241
1894	5,218	438	38	198
1895	5,132	58	59	274
1896	5,019	118	67	354
1897	4,782	59	54	390
1898	4,803	69	49	461

In regard to that class known as "paper colored, gilded, or figured, and wall paper (including bleached paper for lithographs and photographs)," the importation has exceeded the exportation, as the following table shows (1878–1898):

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1878	386	14	1889	605	13
1879	330	16	1890	724	6
1880	374	20	1891	705	2
1881	448	38	1892	596	6
1882	513	35	1893	604	11
1883	552	18	1894	432	20
1884	643	11	1895	525	10
1885	698	16	1896	540	5
1886	751	28	1897	504	24
1887	1,160	16	1898	516	24
1888	436	9			

IMPORTS.

The following tabular statistics will answer more fully the questions in regard to the importation of paper and paper material into Italy.

Importations for 1898 and 1897, showing the quantity and the value of the unit of quantity in lire and in United States currency (the unit being the quintal of 220.46 pounds, 10 quintals to the ton of 2,204.6 pounds) and the total value of the quantity in lire and United States currency (the lira being equal to 19.3 cents).

Articles.	Quantity.		Value per quintal.		Total value.	
	1898.	1897.			1898.	1897.
	Quintals.	*Quintals.*	*Lire.*		*Lire.*	*Lire.*
Rags:						
Vegetable	1,601	3,453	14	$2.75	22,414	48,342
Animal	3,937	5,507	80	15.44	314,960	440,560
Mixed	3,051	3,245	12	2.31	33,561	38,940
Wood pulp:						
Cellulose	181,313	144,107	30	5.79	5,439,390	4,323,210
Other, including straw pulp and similar substances—						
Wet, containing 50 per cent of water	200	500	15	2.89	3,000	7,500
Dry	30,693	35,626	15	2.89	460,395	534,390
Paper:						
White or tinted in pulp—						
Not ruled, any quality	5,168	5,054	75	14.47	387,600	379,050
Also tinted in pulp, glazed only on one side, packing	531	424	35	6.75	18,585	14,840
Ruled	195	170	85	16.40	16,575	14,450
Envelopes	227	224	120	23.16	27,240	26,880
Colored, gilded, or figured, and wall paper (including bleached paper for lithographs or photographs)	5,108	5,054	160	30.88	725,120	765,600
Blotting paper	199	171	80	15.44	15,290	13,680
Packing paper, rough and straw paper not tinted nor glazed	14,672	15,640	20	3.88	293,440	312,800
Playing cards (100 packets)	136	201	80	15.44	10,880	16,080
Printed bills, lithographs, and labels	2,779	2,418	1,000	193.00	2,779,000	2,418,000
Cardboard:						
Ordinary	48,030	47,820	20	3.86	960,600	956,400
Fine	498	545	95	18.33	46,455	51,400
Articles of paper and pasteboard:						
Tubes for bobbins for spinning and weaving	310	....	500	96.50	155,000	....
Buttons of papier-maché and similar material	330	332	300	57.90	99,000	99,600
Pasteboards, cut or bent	6	....	150	28.95	900	....
Others	3,975	3,898	500	96.50	1,987,500	1,994,500
Books:						
Printed—						
In Italian language, bound plainly or unbound	377	332	420	81.06	158,340	139,440
In other languages, bound plainly or unbound	1,402	1,545	430	82.91	602,860	664,350
Bound in any manner	1,452	1,102	550	106.15	783,750	606,100
Record books not printed—						
Unbound or bound in cardboard	8	12	150	28.95	1,200	1,800
Others	133	132	300	57.90	39,900	39,600
Printed music:						
Unbound or plainly bound	266	194	430	82.99	114,380	83,420
Bound in any manner	5	4	550	106.15	2,750	2,200
Total value	....	....	....	....	15,500,715	13,993,507
Total value in United States currency	....	....	....	....	$2,991,638	$2,700,747

Quantity of paper and paper material imported into Italy and the countries whence imported for the past five years.

Articles and whence imported.	1894.	1895.	1896.	1897.	1898.
Rags of all sorts.	*Quintals.*	*Quintals.*	*Quintals.*	*Quintals.*	*Quintals.*
France	17,344	15,167	8,321	5,864	4,124
Other countries	5,459	5,496	6,851	6,341	4,465
Total	22,803	20,663	15,172	12,205	8,589
Wood pulp.					
Austria-Hungary	85,183	89,919	108,903	111,540	131,079
Germany	24,656	37,083	40,667	45,116	52,039
Sweden and Norway	1,710	2,382	16,323	7,175	8,616
Switzerland	15,621	6,170	7,746	5,783	2,992
Other countries	1,076	4,197	5,047	10,619	17,840
Total	128,246	139,751	178,686	180,233	212,206
White paper.					
Austria-Hungary	1,795	1,910	1,902	1,352	1,362
France	1,042	1,069	1,091	917	1,006
Germany	1,417	2,229	2,430	2,800	2,700
Great Britain	567	679	569	586	642
Other countries	615	253	253	217	411
Total	5,436	6,410	6,245	5,872	6,121
Paper, gilded or colored, and wall paper.					
France	852	982	1,239	1,202	998
Germany	2,505	3,021	2,934	2,598	2,653
Other countries	965	1,248	1,231	985	881
Total	4,322	5,251	5,404	4,785	4,532
Wrapping paper.					
Austria-Hungary	3,376	3,669	3,471	4,888	3,024
France	2,682	3,369	2,676	2,069	3,357
Germany	2,865	4,417	7,484	7,795	7,866
Other countries	1,322	849	730	888	425
Total	10,245	12,304	14,361	15,640	14,672
Cardboard.					
Austria-Hungary	50,659	50,081	47,840	45,870	45,461
Germany	1,245	1,009	2,138	726	979
Other countries	666	829	896	1,769	2,079
Total	52,570	51,919	50,874	48,365	48,519

EXPORTS.

Exportations for 1897 and 1898, showing the quantity and the value of the unit of quantity, in lire and in United States currency—the unit being the quintal (220.46 pounds)—and the total value of the quantity in lire and in United States currency.

Articles.	Quantity.		Value per quintal.		Total value.	
	1897.	1898.			1897.	1898.
Rags:	*Quintals.*	*Quintals.*	*Lire.*		*Lire.*	*Lire.*
Vegetable	678	967	35	$6.70	23,730	33,845
Animal	346	764	80	15.44	27.680	61,120
Mixed	1,152	984	12	2.30	13,824	10,824
Wood pulp:						
Cellulose	618	844	30	5.79	18,750	25,320
Other, including straw pulp and similar substances—						
Wet, containing 50 per cent of water	246	310	15	2.89	3,690	4,650
Dry	401	....	15	2.89	6,015	....
Paper:						
White or tinted in pulp—						
Not ruled, any quality	41,855	42,169	70	13.51	2,929,850	2,951,830
Ruled	3,358	9,503	85	16.40	455,430	807,755
Envelopes	407	1,614	120	23.16	48,840	193,680
Colored, gilded, or figured, and wall paper (including bleached paper for photographs or lithographs)	246	241	160	30.88	39,360	38,560
Blotting paper	48	....	80	15.44	3,840	....
Packing paper, raw and rough, and straw paper not tinted nor glazed	46,704	51,089	20	3.88	934,080	1,021,780
Playing cards (100 packets)	1,282	1,221	35	6.75	44,870	42,735
Printed bill, lithographs, and labels	2,927	3,076	1,000	193.00	2,927,000	3,076,000
Cardboard:						
Ordinary	592	693	20	3.88	11,840	13,860
Fine	3,906	4,617	95	18.33	371,070	438,615
Articles of paper and pasteboard:						
Tubes and bobbins for spinning and weaving	....	63	400	77.20	....	25,200
Buttons of papier-maché and similar material	....	136	300	57.90	....	40,800
Others	1,503	2,075	400	77.20	601,200	830,000
Books:						
Printed—						
In the Italian language, unbound or plainly bound	2,284	2,421	420	81.06	959,280	1,016,820
In other languages, unbound or plainly bound	734	743	430	82.99	315,260	319,490
Bound in any manner	938	824	550	106.15	515,900	453,200
Record books, not printed—						
Unbound or bound in pasteboard	206	102	150	28.95	30,900	15,300
Others	323	473	300	57.90	96,900	141,900
Printed music, unbound or plainly bound	105	177	430	82.99	45,150	76,110
Total value	....	....	....	....	10,424,639	11,639,394
Total value in United States currency	....	....	....	....	$2,011,955	$2,246,403

Quantity of paper exported from Italy for the past five years and the countries to which exported.

Articles and whither exported.	1894.	1895.	1896.	1897.	1898.
White paper.	*Quintals.*	*Quintals.*	*Quintals.*	*Quintals.*	*Quintals.*
Austria-Hungary	5,204	5,832	8,296	8,148	8,596
France	1,330	2,197	1,824	754	585
Germany	342	777	687	474	431
Turkey	1,825	2,462	3,431	4,279	5,549
Africa	2,844	4,100	2,821	5,747	4,819
North America	735	566	462	621	978
Central and South America	17,068	20,300	23,269	23,461	27,000
Other countries	2,677	2,189	3,135	3,956	5,229
Total	32,024	38,423	43,925	47,620	53,286
Wrapping paper.					
Austria-Hungary	6,277	5,023	3,957	2,865	3,171
Malta	3,232	2,860	2,825	3,419	3,021
Turkey	8,893	5,376	7,724	6,807	10,218
Egypt	16,862	21,006	20,549	24,520	25,622
Central and South America	6,150	7,197	554	6,122	4,904
Other countries	3,495	3,825	3,113	2,931	4,153
Total	44,909	45,282	46,722	46,704	51,089
Works of paper and cardboard.					
Central and South America	594	852	964	819	1,549
Other countries	524	535	491	684	725
Total	1,118	1,387	1,455	1,503	2,274

There is an export duty on rags of all sorts of 8.80 lire ($1.69) per quintal (220.46 pounds). The shipments through this consulate are of small importance. In a total export, in 1898, of $7,689,036.28, there was only $2,831.85 worth of books and music, while in 1897 there was only $3,119.11 out of a total of $4,891,436.77. It is seen from the foregoing tabular statistics that the wood pulps, especially cellulose, represent a prominent part of the importation of paper material into Italy, and that most of them come from Austria-Hungary. Whether the pulp manufacturers of the United States can get a foothold or not depends upon whether they can undersell all competitors and whether they can furnish as satisfactory pulp. There is more and more of this used every year, and, as can be seen from the tabular statistics, most of it is imported. In regard to the forms in which it comes, there are no particular provisions as to either size or weight. It usually arrives in the form of rolls, weighing from 110 to 220 pounds. It also comes in bales or folded sheets, generally covered with jute and bound with bands of iron or wire, and, whether national or foreign, is delivered free of freight and duty at the stations where the mills are located. It is generally invoiced as "perforated wood pulp."

The values of the unit, the quintal (220.46 pounds), as given by the custom-house authorities, for the importations and exportations of 1897 and 1898 are found in the tables for exports and imports for those two years, and following are the corresponding values for many of the articles, from 1881 to 1896, so that the changes since the former date can be readily seen. For example, 1 quintal of vegetable rags imported in 1881 was valued at 35 lire ($6.75) and in 1898 at 14 lire ($2.75); and 1 quintal exported in 1881 was valued at 45 lire ($8.68) and in 1898 at 35 lire ($6.75).

Value per quintal (220.46 pounds) of imports and exports, 1881–1896.

Articles.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.
Imports.	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*Lire.*	*L*	*Lire.*	*Lire.*	*Lire.*
Vegetable rags	35	33	30	27	25	23	23	23	23	22	22	22	22	21	18	17
Animal rags	25	23	22	21	20	18	18	18	18	90	85	85	85	82	80	80
Mixed rags	30	28	25	23	20	19	19	19	18	17	17	17	17	15	15	14
Mechanical wood pulp (dry, and that containing 50 per cent of water)	33	30	27	25	20	19	18	15	15	15	15	15	18	17	16	15
Chemical wood pulp (cellulose)	33	30	27	25	45	42	40	38	35	35	35	33	36	33	30	30
Paper, white or tinted in paste, not ruled, any quality	140	140	130	125	110	105	95	90	90	90	85	80	80	78	75	75
Paper, white or tinted in paste, ruled	....	....	....	....	....	....	115	110	105	100	95	90	90	90	87	85
Envelopes	....	....	....	....	....	....	160	155	150	150	145	135	135	130	125	120
Paper, colored, gilded, or figured, and wall paper	220	210	200	190	185	178	175	175	175	170	170	160	160	160	160	160
Blotting paper	50	120	115	112	107	103	100	100	100	100	95	90	90	90	85	83
Wrapping paper, tinted in paste, glazed only on one side	....	....	....	....	....	....	....	....	....	....	....	30	35	35	35	35
Wrapping paper, raw and rough, and straw paper, not tinted nor glazed	50	40	35	35	35	32	30	30	30	30	20	20	20	20	20	20
Ordinary cardboard	45	40	35	33	30	27	30	26	22	20	22	20	20	20	20	20
Fine cardboard	150	140	130	130	125	125	120	115	115	110	110	105	105	100	95	95
Exports.																
Vegetable rags	45	42	40	36	33	33	33	33	33	33	32	32	36	35	35	35
Animal rags	25	23	22	21	20	18	18	18	18	90	85	85	85	82	80	80
Mixed rags	30	28	25	23	20	19	19	19	18	17	17	17	17	15	15	14
Mechanical wood pulp (dry, and that containing 50 per cent of water)	33	30	27	25	20	19	18	15	15	15	15	15	18	17	16	15
Chemical wood pulp (cellulose)	33	30	27	25	45	42	40	38	35	35	35	33	36	33	30	30
Paper, white or tinted in paste, not ruled, any quality	120	117	110	105	100	98	95	90	90	90	85	80	80	78	72	70
Paper, white or tinted in paste, ruled	....	....	....	....	....	....	115	110	105	100	90	90	90	90	87	85
Envelopes	....	....	....	....	....	....	160	155	150	150	145	135	135	130	125	120
Paper, colored, gilded, or figured, and wall paper	180	180	180	175	170	163	175	175	175	170	170	160	160	160	160	160
Blotting paper	50	120	115	112	107	103	100	100	100	100	95	90	90	90	85	83
Wrapping paper, tinted in paste, glazed only on one side	....	....	....	....	....	....	....	....	....	....	30	35	35	35	35	35
Wrapping paper, raw and rough, and straw paper, not tinted nor glazed	50	40	35	35	35	32	30	30	30	30	20	20	20	20	20	20
Ordinary cardboard	45	40	35	33	30	27	30	26	22	20	22	20	20	20	20	20
Fine cardboard	130	130	125	125	120	120	120	115	115	110	110	105	105	100	95	95

NOTE.—The value of the lira is 19.3 cents.

Tariff on paper and paper material imported into Italy.

Articles.	Duty per unit (220.46 pounds).			
	Conventional.		General.	
	Lire.		*Lire.*	
Rags of all sorts	Free.	....	Free.	....
(Waste papers for maceration are free of duty, provided they have been made useless for any other purposes.)				
Wood pulp (under this head are classed only perforated pulps, or those valueless as cardboard):				
Cellulose	Free.	....	2.00	$0.39
Other, including straw pulp and similar substances—				
Wet, containing 50 per cent of water	.50	$0.10	2.00	.39
Dry	1.00	.193	2.00	.39
Paper:				
White or tinted in pulp, any quality—				
Not ruled	12.50	2.41	15.00	2.89
By treaties with Germany and Austria-Hungary, packing paper; also tinted in pulp, glazed only on one side	5.00	.97	15.00	2.89
Ruled	20.00	3.86	20.00	3.86
Envelopes	25.00	4.82	25.00	4.82
By treaties with Austria-Hungary and Germany, envelopes are classified as paper, white or tinted in pulp; also that paper which is cut into rectangular or other shapes to make envelopes out of.				
Colored, gilded, or figured, and wall paper (including bleached paper for photographs and lithographs)	40.00	7.88	45.00	86.85
Blotting paper	15.00	2.89	15.00	2.89
(Under this head, only that known in the trade as blotting paper, and not every paper without glue.)				
Packing paper, raw and rough, and straw paper not tinted nor glazed	3.00	.57	8.00	1.54
By treaties with Austria-Hungary and Germany, the duty of 3 lire (57 cents) is applied to all the packing paper; also that tinted in pulp, not glazed.				
Playing cards	*40.00	7.72	*40.00	7.72
Printed bills, lithographs, and labels	75.00	14.47	100.00	19.30
By treaties with Austria-Hungary, Germany, and Switzerland, a duty of 75 lire ($14.47) is applied to chromolithographs.				
Cardboard:				
By treaties with Austria-Hungary and Germany, this class includes the pasteboard in rectangular shapes with beveled edges.				
Ordinary (made of several sheets of paper without glue)	2.00	.38	8.00	1.54
By treaties with Austria-Hungary and Germany, compressed cardboard without glue is classified as ordinary cardboard; any other cardboard, pressed and glued, is classified as fine. The ordinary cardboard, weighing less than 300 grams per square meter, which has the character and quality of packing cardboard, is classified under the head of packing or wrapping paper.				
Fine (general duty on paper according to quality).				
Articles of paper and pasteboard:				
By treaties with Austria-Hungary and Germany, there are included in this class the articles of paper and pasteboard containing paper linen and other materials.				
Buttons of papier-maché and similar material	50.00	9.65	50.00	9.65
Cut or bent cardboards (duty the same as cardboard, plus 12 lire ($2.32) per quintal—220.46 pounds).				
Others	80.00	15.44	80.00	15.44

* Per 100 packets.

Tariff on paper and paper material imported into Italy—Continued.

Articles.	Duty per unit (220.46 pounds).			
	Conventional.		General.	
Books:	*Lire.*		*Lire.*	
By treaties with Switzerland, printed books with illustrations or plain lines to separate the headings or chapters are not on this account subject to a higher duty.				
Printed—				
In the Italian language, unbound or plainly bound (according to the general duty on paper and its composition).				
In other languages, unbound or plainly bound	Free.	....	Free.	....
(There are classified among the printed books, also newspapers of very recent date; but those of not very recent date are classified as wrapping or packing paper.)				
Bound in any manner	20.00	$3.86	20.00	$3.86
Record books, not printed—				
By treaties with Austria-Hungary, Germany, and Switzerland, a duty of 22 lire ($4.22) is applied to books not printed, bound in cardboard, even if they have the corners and backs covered with cloth.				
Unbound or bound in pasteboard	22.00	4.24	25.00	4.82
Others	40.00	7.72	40.00	7.72
By treaties with Germany, Austria-Hungary, and Switzerland, record books, not printed, bound in pasteboard and covered with cloth, with edges and backs of leather	36.00	5.94	36.00	5.94
Printed music:				
By treaties with Austria-Hungary, Germany, and Switzerland, lithographic music is classified as printed music.				
Unbound or simply bound	Free.	....	Free.	....
Bound in any manner	20.00	3.86	20.00	3.86
Manuscripts	Free.	....	Free.	....

GENERAL INFORMATION.

My efforts to obtain information not found in any of the statistics have not been very successful, and the following are the only answers to the many letters I sent out. The information they contain is sadly indefinite, although my interrogatories were full and explicit.

G. Bagarelli & Co. say:

> Our raw materials consist chiefly of rags and paper waste bought in this country. We generally employ 100 laborers, and our production is packing paper, pasteboards of various qualities, with an increasing production of special ones for weaving establishments. Up to the present time, we have not exported to any extent. Our motor is steam and water, and our machinery was purchased in England, Switzerland, and Italy. Our production is increasing; it is now about 1,560 tons yearly. We use Cardiff coal. The price varies, but is usually 4 lire per quintal ($7.72 per ton).

Francesco Ferrario writes:

> I use only rags obtained in Lombardy, Piedmont, and Veneto and manufacture only handmade paper for ledgers, documents, letters, and checks for national use and some for export. My motor is steam and water. I employ about 60 laborers and produce about 150 tons yearly. I use mineral coal, costing on the average 32 lire ($6.17) per ton.

A. Binda & Co. say:

We manufacture by machinery paper for printing record books and for note purposes. We make a specialty of papers glued with gelatin, ruled papers, glazed papers, mourning papers, and envelopes; also, some bristol boards. We have four continuous machines of the best French and German makes.

Luigi Favina answers:

I use rags purchased in various parts of Italy and manufacture for national use and export. My motor is steam and water. My trade is increasing. I use Cardiff coal and chestnut wood. There is no water power available in this section (Como).

USES OF PAPER.

Following is a tabular list (made up from the general directory for Italy, 1898) of each town or city, also name of province, in this consular district, containing a newspaper, printing establishment, bookstore, photographer, stationery, or lithographic establishment, and the number of each:

Location.	Stationery.	Bookstores.	Stationery and books.	Photographers.	Newspapers and journals.	Lithographic establishments.	Printing establishments.
Province of Brescia.	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*
Brescia	17	8		9	10	4	13
Iseo	2	1					
Lonato		1					
Desenzano sul Lago	2	1		1			1
Montichiara	1						
Breno	2	2	1	1			
Mu	1						
Pisogne		1					
Darfo	1						
Chiari	3						1
Orzinuovi	1	1					
Rovato	4						
Palazzolo sul'Oglio	2	1		1			2
Salo		4					2
Gavardo		1					
Verolanuova	1	2					1
Total	37	23	1	12	10	4	20
Province of Bergamo.							
Bergamo	17	11		8	11	4	14
Alzano Maggiore	2						
Clusone			3				1
Lovere			2				
Treviglio	3	5		2			2
Caravaggio	2						1
Martinengo		1					
Romano di Lombardia			2				
Total	24	17	7	10	11	4	18
Province of Como.							
Como	27	8		4	17	4	12
Cernobbio		1					
Cadorago	9						
Cantu	4						3

Location.	Stationery.	Bookstores.	Stationery and books.	Photographers.	Newspapers and journals.	Lithographic establishments.	Printing establishments.
Province of Como—Cont'd.	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*
Erba	2						1
Gravedona							1
Menaggio	1						1
Lecco	7	7		3	3	1	6
Merate	1						1
Asso	1						1
Messaglio			1				
Casate Nuova	1						
Oggiono	1	2					1
Varese			9	2	5	3	5
Luino	3			1	3		3
Total	57	18	10	10	28	8	35
Province of Cremona.							
Cremona	13	10		3	7	4	9
Pieve d'Olmi	1	1					
Casalbuttano ed Uniti	1						1
Pescarolo ed Uniti	1	1					
Ostiano		1					1
Pizzighettone	1	2					
Soresina	4						1
Casalmorano	1						
Castelone	2						1
Casalmaggiore	4	4				1	4
Castelponzone	1	1					
Gussola	1						
Piadena	1	1					1
Crema	7	5		1	5		6
Pandino	2						1
Soncino	3	3					2
Total	43	29		4	12	5	27
Province of Pavia.							
Pavia	13	11		5	9	4	7
Bobbio	2						2
Varzi							1
Mortara		3			4		3
Garlasco	3						2
Mede		2					2
Robbio							1
Confienza	1						
Vigevano	4	5			4		3
Broni	2	2					1
Casteggio	2	1					1
Voghera	4	3		2	4		3
Stradella	2	2		1			2
Total	33	29		8	21	4	28
Province of Piacenza.							
Piacenza			11	5	13	2	11
Bettola		1					
Monticelli d'Ongina	1	2					
Fiorenzuola d'Anda	3						1
Cortemaggiore	3						
Total	7	3	11	5	13	2	12

Location.	Stationery.	Bookstores.	Stationery and books.	Photographers.	Newspapers and journals.	Lithographic establishments.	Printing establishments.
Province of Sondrio.	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*	*Number.*
Sondrio			6	2	2	1	4
Chiavenna	3	3		1	2		2
Morbegno	4	3					1
Chiuro	1						
Tirano		2		1			1
Total	8	8	6	4	4	1	8
Province of Milano.							
Milan	146	66		41	210	64	101
Affori	1						
Cassano d'Adda	2						1
Melgo	2						1
Trezzo sul Adda	1						1
Melegano							1
Abbiategrasso	2						2
Corbetta			1				1
Magenta	2						
Gallarate	4			2			3
Busto Arsizio	6						5
Legano	2						
Rho	2						2
Saronno	3						3
Lodi	12	10		3	4		6
Casalpusterlengo			3				1
Codogno	5	4		2			2
Saint Angelo Lodigiano		2		1			1
Monza	10	2		1	4	4	6
Carate Brianza	2						
Desio	3						1
Seregno	2	2					1
Vimercate	1						1
Agrate Brianza	1						
Total	209	86	4	50	218	68	140
Province of Parma.							
Parma			15	8	10	3	12
Borgo San Donnino	3	3		1			2
Busseto	1						1
Noceto		1					1
Borgotaro							1
Total	4	4	15	9	10	3	17
Grand total	422	217	54	112	327	99	305

GROWTH OF THE PRINTING AND LITHOGRAPHIC INDUSTRIES.

I have no statistics at hand for the whole consular district, but only for the province of Milano, showing the number of printing establishments as far back as 1818. However, the following is a brief account of the growth from that date. In 1818, there were 14 printing establishments in this province; in 1850 there were 35, in 1856 there were 39, and in 1893 there were 110; to-day there are, as above stated, 305.

In 1856, the statistics show that of the above 39, 36 were in Milan, 2 at Monza, and 1 at Gallarate. They employed 500 workmen, used 230 printing presses, and the work consisted chiefly in printing forms for local and private use, the printing of books, and to a greater degree the printing of newspapers and journals of various kinds. In 1893, of the 110 printing establishments, 88 were in Milan and were the more important, the other 22 being of little account, comparatively speaking, as they employed only 169 workmen, used 53 machines for hand work, and 34 printing presses. Their work was local. Those in Milan employed 2,486 workmen, used 361 machines (many of these the most modern), and 144 presses. Thirty-four of these used 48 motors (of gas and steam) of 258 horsepower. Seventy-six, employing 1,438 men, did work to order. The others printed exclusively books, newspapers, and music. There were 12 of these, employing 1,048 workmen, using 5 steam motors, 13 gas motors, and 1 water. Of the machines, 8 were double backing, 8 continuous for newspapers, and 2 for illustrations. The increase since 1893 has been principally of the smaller class that do a wholly local business.

The lithographic industry is quite important in this district. In 1893, there were 82 concerns employing 1,032 workmen and using 301 printing presses and 70 machines. They printed advertising bills, sacred images, illustrations for match boxes (printed in colors on paper or cloth), also prints in black and white. The principal sale of the sacred images is said to be to Spain. The chief exportation of lithographic prints for match boxes is to South America, Germany, and France. The exportation of prints for fans and calenders is principally to France, Spain, and Switzerland. The figuring, stamping, or printing of wall paper is not extensive, and the importation of colored, gilded, and figured paper is mostly for use on walls.

For the manufacture of boxes of various kinds and other works of pasteboard—also of what is called lace paper—there are 48 establishments in the province of Milan, employing 1,207 laborers. Three of these manufacture by hand and the others by machinery, using 253 machines. Their motor is steam and gas, of 65 horsepower. Of the various newspapers, journals, etc., mentioned above as published in this consular district, the following tabular list shows the periods of publication:

Publications outside the city of Milan.

Location.	Periods of publication.										
	Daily.	Weekly.	Monthly.	Quarterly.	Yearly.	Twice per week.	Twice per month.	Thrice per month.	Six per month.	Unknown.	Total.
Brescia	3	3	2				2				10
Bergamo	3	3	3				2				11
Como	2	5	3		1		2	1		3	17
Lecco		3									3
Varese	1	3	1								5
Luino		1								2	3
Cremona	1	2					2	1		1	7
Crema		5									5
Pavia	1	1	1			1	1	2	1	1	9
Mortara		1	1				1			1	4
Voghera		1								3	4
Vigevano		1								3	4
Piacenza	2		5		1		3			2	13
Sondrio		2									2
Chiavenna										2	2
Parma	1	2	2	1	1	1	2				10
Monza		3	1								4
Lodi		3					1				4
Total	14	39	19	1	3	2	15	4	1	18	117

Publications in Milan.

Character.	Periods of publication.										
	Daily.	Weekly.	Monthly.	Twice per week.	Thrice per week.	Twice per month.	Thrice per month.	Every two months.	Quarterly.	Unknown.	Total.
Political	8	1								2	11
Commercial	4	4	4	1				1		12	26
Agricultural		4	2			2		1	1	4	14
Scientific		3	2			1			3	8	17
Medical		3	6	2		1		2		12	26
Fashions		3	6			4				5	18
Theatrical		7	1		3					3	14
Musical		1								3	4
Humorous		3								2	5
Advertising		3				1	1			2	7
Sporting		3		1	1	1				6	12
Judicial		3	2			1				1	7
Religious		2	2			1				7	12
Literary		5	3			1			1	6	16
Family		1	1			1				2	5
Travel		1	2							2	5
Miscellaneous		4	2						1	4	11
Total	12	51	33	4	4	14	1	4	6	81	210

PUBLICATIONS IN ITALY.

I can find no dates given for the publication of those put down as "unknown."

The daily papers in Milan have four pages, five columns to the page; size of sheets, about 19 by 23 inches. The Sunday editions carry no extra sheets.

In regard to the total of pamphlets, reviews, journals, and newspapers published in Italy, the following tables (taken from the annual statistics of agriculture, commerce, and industry of 1898) may prove of interest:

Number of pamphlets, journals, and reviews published in Italy for the five years up to 1898.

1893	9,489
1894	9,416
1895	9,437
1896	9,778
1897	9,732

Number of newspapers published, 1883–1895.

1883	1,378
1884	1,298
1885	1,459
1887	1,606
1889	1,596
1891	1,779
1893	1,897
1895	1,901

Classification of newspapers according to different languages.

Language.	1884.	1885.	1887.	1889.	1891.	1893.	1895.
Italian	1,251	1,405	1,523	1,507	1,673	1,798	1,798
Italian and Italian dialect	9	10	33	26	31	27	33
Italian and Latin	2	5	4	5	6	5	11
Italian and other	7	12	15	24	24	25	21
Italian dialect	7	7	8	8	10	15	9
Latin	5	4	6	7	7	8	6
Foreign, including Volapuk	17	16	17	19	28	19	23

There were no separate statistics for 1883.

MANUFACTURERS OF AND DEALERS IN PAPER.

Milan is the center of distribution for many of the mills outside this consular district, as well as for those inside, and following are lists of paper firms, companies, or brokers, with their addresses, according to their specialties. There will, of necessity, to a certain extent be a repetition of some names found in the lists of paper-mill owners and dealers in another part of this report.

Manufacturers of paper and cardboard.

Successors of the firm of Agnelli & Lualdi, via Pantano 15.
Alovisi & Co. (agents), Corso S. Celso 6.
Andreoli & Co,, via S. M. Vail 3.
G. Bagarelli & Co., via Rugabella 15.
Berberich Carlo, via Vivaio 14.
E. Bertetti, Viale Monforte 10.
A. Binda & Co., Corso P. Romano 122.
Cantu Filippo, via S. Paolo 21.
Luigi Cescotti, via S. Paolo 21.
Giuseppe Civelli, via S. Damiano 16.
A. Clivati & Co., Viale Monforte 9.
Comi & Sommarura, Corso Garibaldi 81.
Ugo Console, via P. Castaldi 1.
Secana Daelli, Corso P. Romano 42.
Edoardo Gavazzeni, via Rugabella 3.
Luigi Jacob & Co., via S. Dalmazio 6.
G. Lamma, via Broletto 13.
Tito Mangiagalli, via Fieno 6.
P. A. Molina, via S. Fedele 3.
A. Monchicourt, via S. Marco 10.
Antonio Podesta, via Cappellari 9.
Dom. Rombeletti, Foro Bonaparte 7.
Societa Cartiere Meridionali, via P. Castaldi 1.
Edoardo Sonzogno, via Pasquirolo 14.
Stermeri & Co., Viale Monforte 39.
Giuseppe Tessera, Tre Ronchetti.
D. G. Vianini & Co., via Solferino 18.
E. Vita & Fratelli, Filodrammatici 16.
Ermanno Voetsch, via V. Monti 25.
Vonwiller & Co., via Clerici 2.

Dealers in paper and cardboard.

Successors of the firm of Agnelli & Lualdi, via Pantano 15.
G. Alberti & Co., via S. Paolo 16.
G. Ascari, via L. Settala 6.
Alcide Bassetti, via Bochetti 1.
Bertarelli & Sciomachen, via Orefici 2.
Augusto Bertschmann, via Ratti 2.
G. Bizzozzero, via Moscova 37.
Bollani Fratelli, via Bochetto 5.
Giulia Borroni & Co., via Gozzadini 3.
Carlo Capelli, via Vetere 24.
A. Chun, via S. M. Fulcorino 20.
Colombo & Grassi, via Donizzetti 2.
Comotti & Gignous, via S. Orsolo 3.
G. Conti & Co., via Fieno 3.

Dealers in paper and cardboard—Cont'd.

Giuseppe Dacomo, via Fieno 3.
Gerolarmo De Dominici, via Rastrelli 6.
G. E. De Giovanni, Piazza P. Ferrari 3.
De Magistris Fratelli, via S. Vincenzo 8.
Ercole Fiocchi, Corso P. Romana 40.
Alberto Gavazzi, via S. Andrea 2.
Augusto Haas, via P. Verri 7.
Kahn Fratelli, via Senato 20.
Giulio Maga, via S. Pietro all'Orto 10.
Tito Mangiagalli, via Olmetto 7.
Battista Mariani, via Rovello 16.
Giov. Martini & Co., Corso Garibaldi 81.
A. Monchicourt, via S. Marco 12.
Cesare Padoa, via Daniele Crespi 3.
Rigamonti Fratelli, via S. Maria Fulcorina 17.
Emilio Sanvidotti, via Broletto 20.
Sartorio & Nani, Ripa Ticinese 13.
Anselmo Scarenzio, Corso S. Gottardo 6.
Carlo Vetter, via Alessandro Volta 11.
Enrico Vita & Fratelli, via Filodrammatici 1.
Santo Vittani, via Vittoria 11.
Ivo Walter & Co., via Principe Umberto 36.
Zuanelli, via Manzoni 10.

Dealers in waterproof paper, prepared with tar and cloth.

Alcide Bassetti, via Bocchetto 1.
P. A. De Magistris, via Bassono Porrone 8; via Cesare Correnti 15; Piazza Macello 19.

Dealers in wrapping paper.

Alcide Bassetti, via Bocchetto 1.
Comotti & Gignous, via S. Orsola 3.
Sternieri & Co., Viale Monforte 39.

General paper dealers.

G. B. Bellasio, via Fontana 23.
Bertarelli & Sciomachen, via Orefici 2.
Federico Binetti & Co., via S. Eufemia 4.
B. si Mario & Co., via Fieno 1.
Riccardo Campi, via Bigli 1.
Ferdin. Dell 'Orto, Viale P. Venezia 26.
G. Malerba & Co., via Orti 31.
G. Negretti, via S. Paolo 21.
Tensi Fratelli, via Orti 2.

Dealers in blue-print paper, drawing paper, and heliographic paper.

A. Messerli, Piazza Castello 5.
Kann Fratelli, via Solferino 36.
Bertschmann & Co., via Ratti 2.

Dealers in parchment paper.

G. E. De Giovanni, Piazza P. Ferrari 3.
Giulo Maga, via S. Pietro all 'Orto 10.

Dealer in filtering paper.

P. A. De Magistris, via Bassone Porrone 8; via Cesare Correnti 15; Piazza Macello 19.

Manufacturers of papier-maché articles.

Riccardo Gross, Foro Bonaparte 76.
Paolo Sevesi & Co., Piazza Belgioioso 8.
Tradico Fratelli, Piazzi Staz, Centrale 11.

Manufacturers of paper lace.

Camillo Bargoni, via Pietro Verri 18.
A. Caccia & Co., Corso Garibaldi 76.
G. Gerbino, Cesare Correnti 12.
L. Gliamas & Son, via Tre Allergh 17.
Hirschberg, via Savona 24.
Moretti & Co., via Campo Lodigiano 11.
G. Negretti, via S. Paolo 21.
Angelo Ribaldi, Piazza Risorgimento 5.
Robbi & Melzi, via Principe Amedeo 11.

Dealers in emery paper.

Adamson Bader & Co., via Lecco 12.
Alcide Bassetti, via Bocchetto 1.
Stefano Fischer, via Solferino 36.
Schevarzenbach di Koelliker, via S. Radegonda 10.
Giuseppe Garbarini, Piazza Castello 1.
Geriach & Co., via Brera 18-20.
Pietro Massara, Corso Sempione 116.
Emilio Nusperli, via B. Cavalieri 6.
Italian Society, via Mazoni 4.

Manufacturers of cardboard parchment.

Bertarelli & Sciomachen, via Orefici 2.
A. Chun, via S. M. Fulcorina 20.
Comotti & Gignous, via S. Orsota 3.
C. Conti & Co., via Fieno 3.
Gius. Danieli, via S. Umberto 5.
Edoardo Gavazzeni, via Rugabella 3.
Carlo Vetter, via A. Volta 11.
Ivo Walter & Co., via Principe Umberto 36.

Manufacturers of and dealers in playing cards.

Raineri Bordoni, via Arena 14-16.
C. Cordani, via Pantano 6.
Francesco Pampuri, via Aldo Manuzio 2.
Antonio Parravicini, via Orefici 3.
Giuseppe Saporiti, via Verziere 1.

Dealers in maps.

Paolo Carrara, via S. Margherita 15.
Giov. Gussoni, via Torino 2.
Ferdinando Sacchi & Sons, via T. Grossi 2.
Antonio Vallardi, via Moscova 40.

Manufacturers of and dealers in wall paper.

Augusto Andi, via S. Zeno 5.
E. Besozzi, Corso Vittorio Emanuele 32.
Carlo Bossi, via Spiga 2 A.
Pietro Colombo, via Monte Napoleone 6.
Luigi Crippa, Viale Porta Venezia 14.
Pietro Danelli, via Monte Napoleone 45.
Carlo Ghezzi, via Brisa 1.
Torquato Ghezzi, via Vittoria 35.
Achille Giacomini, via S. Sisto 12.
Angelo Gianoli, Corso Porta Romana 24.
Pietro Gianoli, via Maddalena 18.
Angelo Lomater, via S. Andrea 18.
G. E. Lora, via Torino 70.
Montalbetti & Pessina, via Foro 1.
Successors to E. Mont-Louis & Co., via A. Manzoni 15; Corso Porta Nuova 17.
Paola Nebulona, via Bramante 15.
Maggione Nervi & Co., Ponte Vetere 1.
Carlo Oggioni, via S. Radegonda 10.
C. Paccellini, via S. Manzoni 1.
Carlo Piatti, via Pesce 6.
Piatti Fratelli, Piazza del Carmine 10.
A. Pisani, via Rovello 1.
Pietro Pogliaghi, via Sala 7.
Carlo Pogliaghi, via Solferino 8.
Eugenio Ponzoni, Corso P. Romana 42.
Radice Eredi, via Nirone 7.
Gaetano Sala, Piazza Mercato P. Tenaglia 1.
Paolo Sevesi & Co., Piazza Belgioioso 3.
Italian-French Society, A. Manzoni 7.
Tuchtel Filli, Viale P. Magenta 37.
Innocente Tradico, via Durini 25.
Gaetano Vidi, via S. Clemente 4.
Vidova Vignola, via Monte Napoleone 29.
Emilio Villa, via Lupetta 2.
Ved Villa di Emilio, via S. Zeno 3.

There are in Milan 42 establishments of more or less importance for the binding of books.

FREIGHT RATES.

There are eight classes for freight in general. The raw material for and the production of the paper mills are classified as follows:

Class 1.—Drawing paper, letter paper, parchment paper, paper for artificial flowers, cigarette and other fine paper, gilded or colored paper, maps, playing cards, books printed and not printed or printed simply for office use, thin cardboards for mounting photographs and for visiting cards.

Class 2.—Does not cover paper.

Class 3.—Waterproof cardboards for copy books.

Class 4.—Emery paper and glazed paper; ordinary paper for writing, printing, and for music; blotting paper; and the best quality packing paper.

Class 5.—Coarse packing or wrapping paper, ordinary cardboard or bristol board, roofing cardboard soaked with tar and coated with slate dust, sand, etc.; also waterproof cardboards for railroad cars.

Class 6.—Wood pulp for the making of paper and rags of any kind in bales.

The following are the rates for freight per kilometer (0.62137 mile—3,280 feet and 10 inches) on the quintal. To classes 1, 3, 4, 5, and 6 is added a tax of 0.204 lira (4.9 cents) per quintal (220.46 pounds), plus 5 centesimi (1 cent) for stamp tax on every shipment.

Special tariff for goods with no weight limit.

[Unit of weight, quintal (220.46 pounds).]

Distance in kilometers.*	Class 1.	Class 3.	Class 4.	Class 5.	Class 6.
	Lire.†	*Lire.*†	*Lire.*†	*Lire.*†	*Lire.*†
20	0.32	0.24	0.20	0.16	0.14
21	.34	.25	.21	.17	.14
22	.35	.26	.22	.17	.15
23	.37	.28	.23	.18	.16
24	.39	.29	.24	.19	.17
25	.40	.30	.25	.20	.17
26	.42	.31	.26	.21	.18
27	.44	.33	.27	.22	.19
28	.45	.34	.28	.22	.19
29	.47	.35	.29	.23	.20
30	.48	.36	.30	.24	.21
31	.50	.37	.31	.25	.22
32	.52	.39	.32	.26	.22
33	.53	.40	.33	.26	.23
34	.55	.41	.34	.27	.24
35	.57	.42	.35	.28	.24
36	.58	.44	.36	.29	.25
37	.60	.45	.37	.30	.26
38	.62	.46	.38	.31	.27
39	.63	.47	.39	.31	.27

* 1 kilometer=0.62137 mile.

† 1 lira=19.3 cents.

Special tariff for goods with no weight limit—Continued.

[Unit of weight, quintal (220.46 pounds).]

Distance in kilometers.	Class 1.	Class 3.	Class 4.	Class 5.	Class 6.
	Lire.	*Lire.*	*Lire.*	*Lire.*	*Lire.*
40	0.65	0.48	0.40	0.32	0.28
41	.66	.50	.41	.33	.29
42	.68	.51	.42	.34	.29
43	.70	.52	.43	.35	.30
44	.71	.53	.44	.35	.31
45	.73	.55	.45	.36	.32
46	.75	.56	.46	.37	.32
47	.76	.57	.47	.38	.33
48	.78	.58	.48	.39	.34
49	.79	.59	.49	.39	.34
50	.81	.61	.51	.40	.35
51	.83	.62	.52	.41	.36
52	.84	.63	.53	.42	.37
53	.86	.64	.54	.43	.37
54	.88	.66	.55	.44	.38
55	.89	.67	.56	.44	.39
56	.91	.68	.57	.45	.39
57	.93	.69	.58	.46	.40
58	.94	.70	.59	.47	.41
59	.96	.72	.60	.48	.42
60	.97	.73	.61	.48	.42
61	.99	.74	.62	.49	.43
62	1.01	.75	.63	.50	.44
63	1.02	.77	.64	.51	.44
64	1.04	.78	.65	.52	.45
65	1.06	.79	.66	.53	.46
66	1.07	.80	.67	.53	.47
67	1.09	.82	.68	.54	.47
68	1.10	.83	.69	.55	.48
69	1.12	.84	.70	.56	.49
70	1.14	.85	.71	.57	.49
71	1.15	.86	.72	.57	.50
72	1.17	.88	.73	.58	.51
73	1.19	.89	.74	.59	.52
74	1.20	.90	.75	.60	.52
75	1.22	.91	.76	.61	.53
76	1.24	.93	.77	.62	.54
77	1.25	.94	.78	.62	.54
78	1.27	.95	.79	.63	.55
79	1.28	.96	.80	.64	.56
80	1.30	.97	.81	.65	.57
81	1.32	.99	.82	.66	.57
82	1.33	1.00	.83	.66	.58
83	1.35	1.01	.84	.67	.59
84	1.37	1.02	.85	.68	.59
85	1.38	1.04	.86	.69	.60
86	1.40	1.05	.87	.70	.61
87	1.41	1.06	.88	.70	.62
88	1.43	1.07	.89	.71	.62
89	1.45	1.08	.90	.72	.63
90	1.46	1.10	.91	.73	.64
91	1.48	1.11	.92	.74	.64
92	1.50	1.12	.93	.75	.65
93	1.51	1.13	.94	.75	.66
94	1.53	1.15	.95	.76	.67
95	1.55	1.16	.96	.77	.67
96	1.56	1.17	.97	.78	.68
97	1.58	1.18	.98	.79	.69

Special tariff for goods with no weight limit—Continued.

[Unit of weight, quintal (220.46 pounds).]

Distance in kilometers.	Class 1.	Class 3.	Class 4.	Class 5.	Class 6.
	Lire.	*Lire.*	*Lire.*	*Lire.*	*Lire.*
98	1.59	1.19	0.99	0.79	0.69
99	1.61	1.21	1.00	.80	.70
100	1.63	1.22	1.02	.81	.71
101	1.64	1.23	1.03	.82	.72
102	1.66	1.24	1.03	.83	.72
103	1.67	1.25	1.04	.83	.73
104	1.69	1.26	1.05	.84	.73
105	1.70	1.28	1.06	.85	.74
106	1.72	1.29	1.07	.85	.75
107	1.73	1.30	1.08	.86	.75
108	1.75	1.31	1.09	.87	.76
109	1.76	1.32	1.10	.88	.76
110	1.78	1.33	1.11	.88	.77
120	1.93	1.44	1.20	.95	.83
130	2.09	1.56	1.29	1.03	.89
140	2.24	1.67	1.38	1.10	.95
150	2.39	1.78	1.47	1.17	1.02
160	2.55	1.89	1.57	1.24	1.08
170	2.70	2.00	1.66	1.31	1.14
180	2.85	2.12	1.75	1.38	1.20
190	3.00	2.23	1.84	1.45	1.26
200	3.16	2.34	1.93	1.53	1.32
210	3.30	2.44	2.02	1.60	1.38
220	3.44	2.55	2.11	1.67	1.44
230	3.59	2.65	2.19	1.74	1.50
240	3.73	2.75	2.28	1.81	1.57
250	3.87	2.85	2.37	1.88	1.63
260	4.01	2.95	2.45	1.95	1.69
270	4.16	3.06	2.54	2.02	1.75
280	4.30	3.16	2.63	2.10	1.81
290	4.44	3.26	2.71	2.17	1.87
300	4.59	3.36	2.80	2.24	1.93
310	4.73	3.46	2.88	2.31	1.99
320	4.87	3.57	2.96	2.38	2.05
330	5.01	3.67	3.04	2.45	2.10
340	5.16	3.77	3.13	2.52	2.16
350	5.30	3.87	3.21	2.60	2.21
360	5.44	3.97	3.29	2.67	2.27
370	5.58	4.08	3.37	2.74	2.33
380	5.73	4.18	3.45	2.81	2.38
390	5.87	4.28	3.53	2.88	2.44
400	6.01	4.38	3.62	2.95	2.49
410	6.15	4.47	3.69	3.02	2.55
420	6.28	4.56	3.76	3.09	2.60
430	6.41	4.66	3.83	3.15	2.65
440	6.54	4.75	3.90	3.22	2.70
450	6.68	4.84	3.97	3.28	2.75
460	6.87	4.93	4.04	3.35	2.80
470	6.94	5.02	4.12	3.42	2.85
480	7.07	5.12	4.19	3.48	2.90
490	7.21	5.21	4.26	3.55	2.95
500	7.34	5.30	4.33	3.62	3.00
510	7.46	5.38	4.40	3.67	3.05
520	7.58	5.46	4.46	3.73	3.10
530	7.71	5.54	4.53	3.78	3.14
540	7.83	5.63	4.60	3.84	3.19
550	7.95	5.71	4.66	3.90	3.23
560	8.07	5.79	4.73	3.95	3.28

Special tariff for goods with no weight limit—Continued.

[Unit of weight, quintal (220.46 pounds).]

Distance in kilometers.	Class 1.	Class 3.	Class 4.	Class 5.	Class 6.
	Lire.	*Lire.*	*Lire.*	*Lire.*	*Lire.*
570	8.20	5.87	4.79	4.01	3.33
580	8.32	5.95	4.86	4.06	3.37
590	8.44	6.03	4.93	4.12	3.42
600	8.56	6.12	4.99	4.18	3.46
610	8.68	6.19	5.05	4.28	3.51
620	8.79	6.27	5.12	4.29	3.55
630	8.90	6.34	5.18	4.35	3.60
640	9.01	6.42	5.24	4.40	3.65
650	9.12	6.50	5.30	4.46	3.69
660	9.24	6.57	5.36	4.51	3.74
670	9.35	6.65	5.42	4.57	3.78
680	9.46	6.73	5.48	4.63	3.83
690	9.57	6.80	5.54	4.68	3.88
700	9.69	6.88	5.61	4.74	3.92
710	9.78	6.95	5.66	4.79	3.96
720	9.88	7.01	5.72	4.84	4.00
730	9.98	7.08	5.77	4.89	4.04
740	10.00	7.15	5.83	4.94	4.09
750	10.17	7.21	5.89	4.99	4.13
760	10.27	7.28	5.94	5.04	4.17
770	10.36	7.34	6.00	5.10	4.21
780	10.46	7.41	6.05	5.20	4.25
790	10.56	7.48	6.11	5.14	4.29
800	10.65	7.54	6.17	5.25	4.33
810	10.75	7.60	6.22	5.29	4.37
820	10.84	7.67	6.27	5.34	4.41
830	10.93	7.73	6.32	5.39	4.45
840	11.02	7.79	6.37	5.43	4.49
850	11.11	7.85	6.42	5.48	4.53
860	11.20	7.91	6.47	5.52	4.57
870	11.30	7.97	6.52	5.57	4.62
880	11.39	8.03	6.57	5.62	4.66
890	11.48	8.09	6.63	5.66	4.70
900	11.57	8.16	6.68	5.71	4.74
910	11.66	8.21	6.72	5.75	4.77
920	11.76	8.26	6.77	5.79	4.81
930	11.85	8.31	6.81	5.83	4.85
940	12.94	8.36	6.86	5.87	4.88
950	12.03	8.41	6.91	5.91	4.92
960	12.12	8.46	6.95	5.95	4.95
970	12.21	8.51	7.00	5.99	4.99
980	12.31	8.56	7.04	6.03	5.02
990	12.40	8.61	7.09	6.07	5.06
1,000	12.49	8.67	7.14	6.12	5.10
1,010	12.57	8.71	7.18	6.15	5.13
1,020	12.65	8.76	7.22	6.19	5.17
1,030	12.73	8.80	7.26	6.22	5.20
1,040	12.82	8.85	7.30	6.26	5.24
1,050	12.90	8.89	7.34	6.29	5.27
1,060	12.98	8.94	7.38	6.33	5.31
1,070	13.06	8.99	7.42	6.36	5.34
1,080	13.14	9.03	7.46	6.40	5.38
1,090	13.22	9.08	7.50	6.44	5.42
1,100	13.31	9.12	7.54	6.47	5.45
1,110	13.39	9.17	7.58	6.51	5.49
1,120	13.47	9.22	7.62	6.54	5.52
1,130	13.55	9.26	7.67	6.58	5.56
1,140	13.63	9.31	7.71	6.61	5.59

Special tariff for goods with no weight limit—Continued.

[Unit of weight, quintal (220.46 pounds).]

Distance in kilometers.	Class 1.	Class 3.	Class 4.	Class 5.	Class 6.
	Lire.	*Lire.*	*Lire.*	*Lire.*	*Lire.*
1,150	13.71	9.35	7.75	6.65	5.63
1,160	13.80	9.40	7.79	6.69	5.67
1,170	13.88	9.45	7.83	6.72	5.70
1,180	13.96	9.49	7.87	6.76	5.74
1,190	14.04	9.54	7.91	6.79	5.77
1,200	14.12	9.58	7.95	6.83	5.81
1,210	14.20	9.63	7.99	6.86	5.84
1,220	14.29	9.67	8.03	6.90	5.88
1,230	14.37	9.72	8.07	6.94	5.92
1,240	14.45	9.77	8.11	6.97	5.95
1,250	14.53	9.87	8.16	7.01	5.97
1,260	14.61	9.89	8.20	7.04	6.02
1,270	14.69	9.90	8.24	7.08	6.06
1,280	14.77	9.95	8.28	7.11	6.09
1,290	14.86	10.09	8.32	7.15	6.13
1,300	14.94	10.04	8.36	7.19	6.17
1,310	15.02	10.09	8.40	7.22	6.20
1,320	15.10	10.13	8.44	7.26	6.24
1,330	15.18	10.18	8.48	7.29	6.27
1,340	15.26	10.23	8.52	7.33	6.31
1,350	15.35	10.27	8.56	7.36	6.34
1,360	15.43	10.32	8.60	7.40	6.38
1,370	15.51	10.36	8.64	7.44	6.42
1,380	15.59	10.41	8.69	7.47	6.45
1,390	15.67	10.46	8.73	7.51	6.49
1,400	15.75	10.50	8.77	7.54	6.52
1,410	15.84	10.55	8.81	7.58	6.56
1,420	15.92	10.59	8.85	7.61	6.59
1,430	16.00	10.64	8.89	7.65	6.63
1,440	16.08	10.68	8.93	7.69	6.67
1,450	16.16	10.73	8.97	7.72	6.70
1,460	16.24	10.78	9.01	7.76	6.74
1,470	16.33	10.82	9.05	7.79	6.77
1,480	16.41	10.87	9.09	7.83	6.81
1,490	16.49	10.91	9.13	7.86	6.84
1,500	16.57	10.96	9.18	7.90	6.88
1,510	16.65	11.01	9.22	7.94	6.92
1,520	16.73	11.05	9.26	7.97	6.95
1,530	16.81	11.10	9.30	8.01	6.99
1,540	16.90	11.14	9.34	8.04	7.02
1,550	16.98	11.19	9.38	8.08	7.06
1,560	17.06	11.24	9.42	8.11	7.09
1,570	17.14	11.28	9.46	8.15	7.13
1,580	17.22	11.33	9.50	8.19	7.17
1,590	17.30	11.37	9.54	8.22	7.20
1,600	17.39	11.42	9.58	8.26	7.24
1,610	17.47	11.46	9.62	8.29	7.27
1,620	17.55	11.51	9.66	8.33	7.31
1,630	17.63	11.56	9.71	8.36	7.34
1,640	17.71	11.60	9.75	8.40	7.38
1,650	17.79	11.65	7.79	8.44	7.42
1,660	17.88	11.69	9.83	8.47	7.45
1,670	17.96	11.74	9.87	8.51	7.49
1,680	18.04	11.79	9.91	8.54	7.52
1,690	18.12	11.83	9.95	8.58	7.56
1,700	18.20	11.88	9.99	8.61	7.59

As before stated, Milan is the center of the output for the paper mills in this district, and, in addition to the foregoing table giving freight rates, another is given below showing the distance from Milan to most of the places where the mills are located; also, distance from Milan to the principal seaports:

From Milan to—	Distance.	System.	Line.
	*Kilometers.**		
Alzano Maggiore	61	Connecting lines with the great railroad systems.	Bergamo-Pontet d'Selva.
Nembro	64	do	Do.
Maderno	129	Lake	Lago di Garda.
Besozzo	65	Mediterranean	Milano-Laveno.
Cernobbio	51	Lake	Lago di Como.
Como	48	Mediterranean	Milano-Chiasso.
Dervio	81	Adriatic	Lecco-Colico.
Gemonio	67	Private lines	Varese-Laveno.
Gravedona	106	Lake	Lago di Como.
Nesso	64	do	Do.
Varese	60	Mediterranean	Milano-Varese.
Vaprio	29	Tramways connected with no particular system.	Milano-Vaprio.
Ponae dell 'Olio	93	do	Bettola-Cremona.
Vigolzone	87	do	Do.
Bergamo	51	Adriatic	Lecco Rovato.
Brescia	82	do	Milano-Verona.
Cremona	85	do	Pavia-Cremona.
Parma	126	do	Piacenza-Bologna.
Piacenza	69	do	Do.
Sondrio	131	do	Colico-Sondrio.
Genoa (seaport)	151	Mediterranean	Milano-Genova.
Leghorn (seaport)	32[illegible]	Stations common to the Adriatic and Mediterranean systems.	Pisa-Livorno.
Naples (seaport)	884	do	Roma-Napoli.
Venice (seaport)	267	Adriatic	Milano-Venezia.
Brindisi (seaport)	979	do	Brindisi-Porto.
Civita Vecchia	555	Mediterranean	Pisa-Roma.
Ancona	422	Adriatic	Ancona-Porto.
Gaeta	885	Mediterranean	Sparanise-Gaeta.
Salerno	919	do	Napoli-Salerno.
Reggio	1,339	do	Battipaglia-Reggio Ca.
Bari	866	Adriatic	Foggia-Brindisi.
Taranto	981	Stations common to the Adriatic and Mediterranean systems.	Napoli-Taranto.
Savona	189	Mediterranean	Genova-Ventimiglia.
Albenga	229	do	Savona-Ventimiglia.
Oneglia	225	do	Genova-Ventimiglia.
S. Remo	281	do	Do.
Cagliari (Sardinia.)	862	Railroad lines in Sardinia connected with the main systems.	Golfo Aranci-Cagliari.
Palermo (Sicily)	1,597	Sicilian	Palermo-Porto.
Trapani (Sicily)	1,785	do	Palermo-Trapani.
Licata (Sicily)	1,650	do	Catania-Licata.
Siracusa (Sicily)	1,542	do	Siracusa-Porto.
Messina (Sicily)	1,357	do	Messina-Porto.
Catania (Sicily)	1,456	do	Catania-Porto.

* 1 kilometer=0.62137 mile.

For the shipments on the Sicilian railroads. there is added to the rates given the tax for the Messina Straits, which is 2 lire (38.6 cents) per ton.

WM. JARVIS,
Consul.

MILAN, *April 17, 1899.*

PALERMO.

Replying to the circular letter from the Department dated November 16, I have to report that there is no paper manufactured in this consular district.

It is impossible to ascertain the amount of paper annually consumed, as little, if any, is imported direct from foreign countries, the paper used here coming from the continent of Italy, principally from Naples and Milan.

CHURCH HOWE,
Consul.

PALERMO, *January 24, 1899.*

VENICE.

POPULATION.

The consular district of Venice covers the region in northeastern Italy known geographically as Venetia. This district has some 8,457 square miles, and its population in 1897 was 3,081,045. The inhabitants are for the most part cultivators of the soil. It would therefore be fair to say that their education and general intelligence are hardly up to what might be expected in localities where the people have more leisure. Various officials to whom I have applied have been unable to give me the exact percentage of illiterates. From my own observation, however, and from opinions expressed by persons acquainted with the region, I do not think 15 per cent would be too large a proportion.

The people have no marked mechanical traits, whether they live in the country or in the cities. Agricultural implements and methods verge always on the antique. While the cities are beginning to accept many of the modern mechanical improvements, and even manufacture a few articles requiring skill and enterprise—such as bicycles and automobiles—yet, on the whole, their instincts do not lie in the way of mechanical economy. They have naturalized among themselves, however, various processes brought from abroad, and are not unwilling to adopt practical innovations.

CONSUMPTION.

The uses of paper in Venetia are mainly three, namely, for writing, printing, and wrapping. There are no manufactures of articles from paper. The kinds used are generally the more ordinary. The quality is not the best, the weight is as light as is compatible with durability, and sizes are large. This is particularly true of writing paper. Sheets used in ordinary correspondence are from 1 to 2 inches larger in each dimension than paper used for the same purposes in the United States. Newspapers, on the other hand, are smaller than with us. They cover four pages only, have no Sunday edition that is distinguished in any way, and suspend publication on several important festivals of the year. Books are printed upon an inferior quality of paper. In this district, moreover, there is no important publishing house.

I have been unable to obtain any figures for the total consumption of paper.

The number of paper firms in the district I have computed to be 220. No estimate is officially given that I have been able to discover. I addressed inquiries to chambers of commerce and prefects of provinces throughout the region, and from their answers, received during the current year, compiled many of my figures, including the above.

The market prices for the three general classes of paper named are as follows: Writing paper, 80 to 100 lire per quintal ($14.40 to $18 per 220.46 pounds); printing paper, 50 lire per quintal ($9 per 220.46 pounds); wrapping paper, 40 to 70 lire a quintal ($7.20 to $13.50 per 220.46 pounds).

Sales are aided by much longer credits than is the case with us. The credits run from three to twelve months, or even longer.

The principal dealers of the region in a total of 220 are:

Carlo Ferrari, Venice.
L. Zoppelli, Treviso.
Gaetano Franchini, Verona.
Pietro Appollonis, Verona.
Giovanni Battiste Randi, Padua.
Dalla Zentil Brothers, Conegliano.
Maria Pietrogrande, Este.
Giovanni Gallo, Vicenza.

The total number of publications of all kinds, according to figures furnished me by the prefects of provinces, is 565. I am inclined to think, however, that this figure is too high, particularly as the one province of Verona claims to issue 500 publications. I believe 100 would cover the number, of which 40 are daily papers. There are a very few illustrated weeklies, and a still smaller number of monthlies. The total is made up by occasional pamphlets, a few books, and advertising matter.

The printers of the province are 136; the publishers, 40.

No figures are obtainable for other classes of paper users. The figures giving the population of the region will furnish suggestions. There are no industries requiring the use of paper and pulp outside the one in question.

That the consumption of paper will increase to an appreciable degree does not seem to me probable. The population of the district is not rapidly growing, while emigration is constant. The people are not upon the eve of any great commercial awakening. Their enterprise is not such as to easily induce the installation of new manufactures among them—especially of those requiring complicated machinery. The consumption of paper will not decline, on the other hand; and the trade will not easily yield the field to newcomers. This trade is now virtually in Italian hands. The consumption is of their own manufacture. They do import, however, finer qualities of foreign make from the following countries, in the order named: Germany, Austria, England, and Holland.

PRODUCTION.

It is impossible to give accurate figures as to the water power of Venetia, developed or undeveloped. It is fair to say, however, that 75 per cent of what there is is undeveloped.

Fully one-half of the district is mountainous. It is bounded on the north by the Trentine and Julian Alps, which, from a height of some 2,000 feet, fall, within an average of 40 miles, to the flat Venetian plain. In the south are the Euganean Hills, 1,800 feet high. The district is bounded on the south by the River Po and contains the well-known rivers Adige, Brenta, Piave, Livenza, and Tagliamento. Beside these, there is a large number of mountain streams that empty into Lake Garda and the Upper Adriatic.

It will thus be seen that the available water power of the district is very large. The manufacturers are not so numerous as to preempt more than an insignificant percentage of this power.

Fuels suitable for manufacturing purposes do not exist in the district. The fuel used consists of English coal, costing in Italy from 40 to 50 lire ($7.20 to $9) the ton.

The facilities for transportation are good. A network of railways over the district facilitates the bringing of supplies near to every factory. The southern rivers—Po, Adige, and Brenta—are navigable. Canals connect them, and the mountainous regions of the north have a series of excellent roads.

Raw materials do not exist in the district to the extent required by the mills. Wood and vegetable fibers are on the ground to any amount desired, but are not used by the manufacturers. Rags are found within the region, but 13,332 tons of them were imported in 1897—the greater proportion from Naples and Sicily, the remainder from Egypt, Greece, and Germany. Rags cost from 4 to 14 lire (72 cents to $2.52) the quintal (220.46 pounds), according to quality.

The mills of the region number 37, including 2 for pulp. The pulp put forth by these factories is employed in making paper.

The methods of production are not examples of modern skill. There are no facilities for making complicated paper machinery, though simple machines are made in Venice, Verona, and Padua. The power used is almost exclusively hydraulic. Hand processes are common, and machine methods are old. The cost of labor is very low, wages varying from 60 centimes to 3 lire (11 to 54 cents) a day. It must be borne in mind, however, that 10 per cent of the total is child labor. Out of 1,138 employees in 35 mills, 126 are under 15 years.

It is generally conceded that Italians are good workmen, and this is particularly true of the northern Italians. They have not marked dexterity or enterprise, but they do well what they are told to do in processes requiring patience rather than judgment.

The tendencies in manufacture are toward improvement of plant and increase of output. These tendencies are by no means of markedly rapid growth, but they are none the less evident.

IMPORTS.

Regarding the importation of paper into Venetia, it is impossible to give figures by classes. One can say in general that imported paper is of finer quality than any produced in the region and is rather for writing and registration than for printing or wrapping. The following figures are published by the Venice Chamber of Commerce, showing the importation in 1897. Only paper brought by sea is considered in this particular list.

	Tons.
Germany	903.21
Austria	205.61
Holland	15.32
England	13.67

The chamber of commerce also publishes the total comparative importation, by values and quantities, for the last six years. It must be borne in mind, however, that books and printed matter are included; and that, while all means of transportation are considered, some slight proportion of the imports enters Venice merely in transit. The chamber of commerce also gives the name import to goods coming from other districts of Italy as well as from abroad.

Year.	Quantity.	Value.
	Tons.	
1893	113.9	$40,972
1894	253.5	59,710
1895	751.7	135,981
1896	767.2	137,442
1897	1,240.5	200,272
1898	....	855,734

It is not to be supposed that in 1898 the importations suddenly quadrupled, as the above table would indicate. The report of the Venice Chamber of Commerce, from which my information is, in this as in other mentioned instances, drawn, gives comparative tables from 1893 to 1897 for commerce by sea. The figures for 1898 cover sea and land importations.

Germany is the country doing the largest proportion of import business, as shown by the list of the chamber of commerce. I am inclined to think, however, that more paper comes from England than is acknowledged, passing first through other regions of Italy. The finest paper is invariably English.

The banking, mail, and telegraphic facilities with the European countries of import are all that could be desired. Drafts are drawn on London, Paris, Vienna, Berlin, Frankfort, and Amsterdam. There are at least four mails daily between Venice and Paris or Vienna. Paris is reached in thirty hours, Vienna in twelve to nineteen, and London in thirty-six to forty-eight. Of telegraphic communications, it is hardly necessary to speak. Charges to France and Germany are 14 centimes (2.5 cents) a word; to England, a trifle more.

OUTLOOK FOR AMERICAN TRADE.

I regret to say that I do not see much of an opening for the United States in this field, so far as paper itself is concerned. This is not a great paper-consuming region. Its demand is largely for cheap paper and is fully supplied by native manufactures and importations from neighboring countries of Europe.

Pulp and articles manufactured from paper have almost no trade here. For that reason, the United States might create the demand which it alone can supply. But to do this, it is absolutely essential that manufacturers put their affairs into the hands of personal representatives and Americans. It is a curious thing that Americans, who certainly do not lack courage and enterprise in domestic operations, should hesitate to venture in the European market. Time and again the Germans or the English risk chances which our own people will not take, and so gain the field. Circulars and advertisements are absolutely thrown away. The European, and especially the Latin European, has a deep-rooted distrust of representations unsupported by samples. Our people must take conditions as they find them and act accordingly. Goods must be sent over for dealers to inspect, and enterprising commercial men acquainted with one or more European languages must introduce their own goods. In no other way can we hope to gain a footing in these already well-stocked markets.

EXPORTS.

With regard to exports of paper, I am again unable to give detailed figures by classes and countries. From such information as has been furnished me by manufacturers and chambers of commerce, I learn that exportation takes place to Austria, Turkey, Egypt, Greece, Tunis, Tripoli, and South America—about in the order named. The exportation to Austria is largely of rough packing paper, and shipments are made to the Adriatic provinces. The other countries accept the other kinds of paper. In Mohammedan countries very little printing paper is, of course, required. The prices vary as follows per quintal (220.46 pounds):

Writing paper	$7.20 to $28.82
Office paper	4.50 to 9.00
Wrapping paper	2.00 to 9.00

The following table gives comparative exports by sea from 1893 to 1897:

Year.	Quantity.	Value.
	Tons.	
1893	1,547.8	$264,689.16
1894	2,001.5	314,475.67
1895	2,259.2	355,859.45
1896	2,541.2	379,453.69
1897	2,651.1	373,447.39

In these returns, books and printed matter of all kinds are included. They make but a small percentage, however. I am at a loss to account for the fact that, while the quantity of export in 1897 was greater than in 1896, the value was less. Such, however, are the figures furnished by the Venice Chamber of Commerce.

In 1898, the exports by all channels were to the amount of 3,108 tons and to the value of $462,427.56. But these figures include shipments to other parts of Italy.

The banking, postal, and telegraphic communications with Austria have already been mentioned.

In the Levant, the Imperial Ottoman Bank is the medium of exchange. This institution in Constantinople, managed by Englishmen, has branches throughout Turkey and Egypt, and has European agencies as well. Banking in the southwest Mediterranean states is through Paris.

Mail service to Constantinople is by train and occupies seventy-two hours or more. There is also a steamship service, occupying a week between Venice and Constantinople and touching at ports of Greece and Asia Minor. There are two lines, each performing this service once a week. There are three weekly services to Alexandria, performing the passage in five or six days. Tripoli and Tunis are reached from Alexandria in two or three days. The fastest mail service to Africa is from Brindisi and Naples in sixty hours, those ports being twenty-four hours from Venice.

There are no export duties upon any kind of paper or articles manufactured therefrom.

TRANSPORTATION.

Transportation in the district of Venetia is effected by railroad, canal, and sea. There are fourteen steamship lines connecting Venice with all parts of the world. It is, of course, out of the question to obtain the charges of these lines for the various articles of the paper industry. It is to be supposed that it rates with what is usual in other ports. The canal service is somewhat irregular, and charges are a matter of contract in each particular case.

The railroad rates vary according to the amount of merchandise to be transported, special figures being given for shipments sworn to be more than 5 or 6 tons. I append a schedule of rates for goods of small amount, forwarded by slow freight. It will be observed that the rate diminishes each 100 kilometers (62.1376 mile). In calculating the charge, however, one must add to the figure for the first 100 kilometers that for the second 100 kilometers at its own rate, and so on—a somewhat involved process.

Amount per ton and per kilometer for small shipments.

Distances.	Class 1.	Class 4.	Class 5.	Class 6
	Cents.	*Cents.*	*Cents.*	*Cents.*
1 to 50 kilometers	2.9	1.8	1.4	1.2
51 to 100 kilometers	2.9	1.8	1.4	1.2
101 to 200 kilometers	2.7	1.6	1.2	1.1
201 to 300 kilometers	2.5	1.5	1.2	1.1
301 to 400 kilometers	2.5	1.4	1.2	1.01
401 to 500 kilometers	2.3	1.2	1.19	0.9
501 to 600 kilometers	2.2	1.19	1.01	0.8
601 to 700 kilometers	2.02	1.1	1.01	0.8
701 to 800 kilometers	1.7	1.01	0.9	0.7
801 to 900 kilometers	1.6	0.9	0.8	0.7
901 to 1,000 kilometers	1.6	0.8	0.7	0.6
Above 1,000 kilometers	1.4	0.7	0.6	0.6
Each ton	36	36	36	22

NOTE.—1 metric ton=2,204.6 pounds; 1 kilometer=0.621376 mile.

Amount per ton and per kilometer for large shipments.

Distances.	Class A.*	Class C.*	Class C.†	Class D.*	Class D.†	Class E.‡
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
1 to 50 kilometers	2.7	1.7	1.6	1.3	1.2	1.19
51 to 100 kilometers	2.3	1.5	1.1	1.3	1.1	1.19
101 to 200 kilometers	1.8	1.19	0.9	0.9	0.8	0.8
201 to 300 kilometers	1.4	1.01	0.8	0.8	0.7	0.7
301 to 400 kilometers	1.4	0.9	0.7	0.7	0.6	0.6
401 to 500 kilometers	1.2	0.9	0.7	0.7	0.6	0.6
501 to 600 kilometers	1.2	0.8	0.6	0.6	0.6	0.6
601 to 700 kilometers	1.19	0.8	0.6	0.6	0.5	0.5
701 to 800 kilometers	1.1	0.8	0.6	0.6	0.5	0.5
801 to 900 kilometers	1.01	0.7	0.6	0.6	0.5	0.5
901 to 1,000 kilometers	1.01	0.7	0.6	0.6	0.5	0.5
Above 1,000 kilometers	1.01	0.7	0.6	0.6	0.5	0.5
Each ton	27	27	27	26	27	22

* For amounts of at least 5 tons.
† For amounts of at least 8 tons.
‡ For amounts of at least 6 tons.

Class 1 includes colored, gilded, stamped, engraved, oiled, and sensitized paper in sheets or letters and envelopes, drawing and copying paper.

Class 4 includes paper, white or dyed in the pulp, plain, polished, or glazed, in sheets or strips, printed, for printing or blotting.

Class 5 includes packing and wrapping paper and fibers.

Class 6 includes pulp and rags.

Class A corresponds to class 1.

Class C corresponds to class 4.

Class D corresponds to class 5.

Class E includes all kinds of pulp for paper.

It will be observed that there is an invariable impost on each ton, in addition to the diminishing rate per ton and kilometer.

H. Abert Johnson,
Consul.

Venice, *July 13, 1899.*

MALTA.

Malta is a consumer and not a producer of paper. The estimated population, according to the last census, is 177,745, of which a large proportion is military and naval. The percentage of illiterates is 70. To a certain extent the people have mechanical traits; but, owing to certain existing conditions, there is not much encouragement for this line of occupation, and there seems to be no likelihood of their embarking in the manufacture of goods and especially paper. Paper is required and used here for printing, wrapping, and correspondence purposes. There are no industries peculiar to these islands especially requiring paper. The classes used are, as a rule, from the very cheap to the medium for printing purposes, according to the particular trade requiring it, and from the medium to the best for correspondence or commercial purposes. Requirements as to sizes and weights are much the same as those in the United States. The kind generally used here for printing purposes is ordered in sheets 22 by 35 inches, and is billed at $1.45 to $2.43 per ream. Correspondence paper varies according to quality. An inferior quality of note size costs at wholesale 36 cents per ream, while the highest grade used reaches $1.21. Letter size runs from 36 to 97 cents per ream. Wrapping paper costs from 30 to 60 cents per ream and is of the double-crown size. As to terms given, Italian houses, from which most of the island's supply comes, usually allow credit for from four to six months or deduct 2½ to 3 per cent for cash. Shipments from this source usually come free on board at Malta. A very good quality of paper comes from England and is confined mostly to printing and correspondence.

In regard to the quantities and value of paper consumed by these islands, I would say that, owing to the fact that the customs authorities do not keep a record of the quantities and values of imports, except of those articles upon which there is a duty, statistics are not available.

DEALERS IN PAPER AND PUBLISHERS.

There are no business houses here confining themselves to the sale of paper, except possibly three or four stationers. The following firms, however, deal in paper as a branch of their general business:

John Critien, stationer, 34 Strada Reale.
L. C. Critien, stationer, 28 Strada San Giovanni.
G. Muscat, 48 Strada Mercanti.
Antonio Gauci, artists' materials, Strada San Giovanni.
A. C. Aquilina & Co., publishers, 58 Strada Reale.
Scicluna & Co., Strada Mercanti.
Luigi Calleja, 35 Strada Tesorereia.

All of these are at the capital city, Valletta, Malta. Following is a list of the regular publications issued here:

The Malta Times; published every Friday at 7 Strada Zecca; quarterly subscription, 5s. ($1.22); single copy, 6d. (12 cents).

The Daily Malta Chronicle; published daily, except on Sundays and holidays, at 104 piazza S. Giovanni; quarterly subscription, 5s. 3d. ($1.28); single copy, 1d. (2 cents).

The Public Opinion; published every Tuesday, Thursday, and Saturday at Strada Mezzodì; quarterly subscription, 5s.; single copy, 2d. (4 cents).

The Government Gazette; published in English and Italian at the government printing office on the 1st, 10th, and 20th of every month and oftener when necessary; annual subscription, 8s. ($1.95); single copy, 1d. (2 cents) for every eight pages.

La Gazzetta di Malta; published daily, except on Sundays and holidays, at 16 Strada Zecca; quarterly subscription, 5s.; single copy, 6d.

Il Risorgimento; published daily, except on Sundays and holidays, at 206 Strada Reale; quarterly subscription, 5s.; single copy, 6d.

Il Lloyd Maltese; a commercial newspaper (the organ of the chamber of commerce) published daily, except on Sundays and holidays, at 206 Strada S. Paolo; quarterly subscription, 5s.; single copy, 1½d. (3 cents).

Il Portafoglio Maltese; published every Monday and Thursday at 131 Strada Marsamucetto; quarterly subscription, 5s.; single copy, 5d. (10 cents).

La Voce del Popolo; published every Friday at 123d Strada Britannica; quarterly subscription, 5s.; single copy, 4d. (8 cents).

Il Patriota; published daily, except on Sundays and holidays, at Strada Mezzodi; quarterly subscription, 5s.; single copy, 2d. (4 cents).

There are about a dozen small printing establishments which do job work and also set a small proportion of the above publications. Pulp is used here to a very limited extent in the manufacture of images. The consumption of paper seems to be slowly increasing. The supply as used here comes from Italy, Austria, France, and England, in the order named. Once each year the colonial government, through its director of contracts, calls for bids for furnishing printing paper. The government uses a large quantity of paper of various classes and qualities. There ought to be a chance in this direction for American paper.

The whole question of production may be answered by the single statement that there are no manufactories of paper at Malta. Rags are so valuable for domestic purposes that they are thoroughly used up, and if any are collected and sent away the amount must be very small indeed.

BANKING.

Banking facilities are excellent and ample. Prominent houses are the Anglo-Egyptian Bank, the Bank of Malta, the Anglo-Maltese Bank, and James Bell & Co. All of these banks are considered safe and sound and have European connections. The tariff list of duties is very short, and comprises mainly liquors, flour, grain, and a few other articles, not including paper or pulp. With these exceptions, Malta may be regarded as a free port.

COMMUNICATION.

As to mail facilities, there is a mail each way each day between Syracuse, Sicily, and Malta under government contract. In addition, several days in the week we receive extra mails by steamers from Italy, France, Gibraltar, and other points. Ordinarily, it takes about thirteen days for a letter to come from New York.

Telegraphic facilities are of the best, Malta being one of the largest cable stations in the world in number of cables touching here.

Recently, Germany made an effort to introduce paper, but failed, not being able to compete with Italy in point of cheapness. The quality tried was of the cheapest class. By far the best quality of paper used comes from England. Terms granted upon the English product are net, with very little credit, accounts being settled monthly. One of the great obstacles to the use of American paper has been lack of direct communication, transshipment being expensive and delays vexatious. Of late, several steamship companies have thought of having ships coming from New York to Mediterranean ports touch here, and I have been recently informed that the Mediterranean and New York Steamship Company, Limited, has decided to run its ships to Malta direct from New York, on the way to Trieste and other Adriatic ports.* The first steamer is at present loading at New York. If these steamers come regularly, it will open the door at Malta for many of our goods, including paper. Another obstacle, and one that may be easily remedied, is the general ignorance of the merchants of Malta of the addresses of American merchants. As a rule, Malta favors American goods and deals in them to a limited extent. I see no reason why we should not sell considerable quantities of paper here. The kind used for writing purposes is, as a rule, of very inferior quality. Wrapping paper averages about the same as that used in the United States. There should be a fair market for our calendered paper and cardboard.

Relative to freight rates on articles of paper, imported from foreign countries to markets in this consular district, one of the largest importers here states that he has figured it out to average about 8 per cent of the value of the goods that come from England and 5 per cent on goods coming from Italy. This, of course, refers to net freight. Usually, it takes from four to ten days for goods to reach here from points of origin, while exactness or frequency is not a thing to be depended upon. Naturally, all transportation to Malta is by water and by tramp or scheduled service. Great Britain controls the carrying trade to Malta, with Austria, Italy, and Germany following in order. Landing charges include 12 cents for landing and 12 cents for cartage per bale of, say, 2½ by 3½ by 2½ feet.

JOHN H. GROUT, Jr.,
Consul.

VALLETTA, *January 26, 1899.*

SUPPLEMENTARY.

On January 26, I sent to the Department a report called for by a circular of instructions relating to "paper in foreign countries." Previous to the preparation of the report, I endeavored to secure statistics from the local authorities here as to the kinds of paper used and the quantities consumed in the government departments. The required information was promised me, but, a long delay seeming inevitable, I sent what data I then had. To-day, I have received the following printed statement:

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*According to a report from Mr. Grout, published in Advance Sheets No. 361, February 28, 1899 (Consular Reports No. 224, May, 1899), communication has been established.

Quantity and respective cost of paper consumed in the government printing office during three years.

Paper.	Quantity.	Price.		Cost.	
1896.	*Reams.*	*s. d.*		*£ s. d.*	
Foolscap	105	23 0	$5.58	120 15 0	$587.62
Royal	41	21 6	5.22	44 1 6	214.49
Cartridge	21	14 0	3.40	14 14 0	71.53
Printing	164	6 3	1.51	51 5 0	247.40
Note	120	4 9	1.15	28 10 0	138.69
Almasso	61	6 5	1.55	19 11 5	95.24
Ordinary	1,084	3 2	.76	171 12 8	835.25
Blotting	75	14 0	3.40	18 15 0	91.24
Total	1,671			469 4 5	2,283.46
1897.					
Foolscap	150	21 9	5.29	163 3 6	794.09
Royal	42	17 6	4.26	36 15 6	178.96
Cartridge	17	14 6	2.80	12 6 6	59.97
Printing	170	6 4	1.54	53 16 8	261.97
Note	130	3 9	.91	24 7 6	118.62
Almasso	190	6 2	1.50	58 11 8	285.09
Ordinary	1,330	2 9	.67	182 17 6	889.96
Blotting	80	13 0	3.16	52 0 0	253.05
Total	2,109			583 18 10	2,841.71
1898.					
Foolscap	137	21 6	5.23	147 5 6	716.71
Royal	47	17 6	4.26	41 2 6	200.13
Cartridge	12	12 3	2.98	7 3 0	34.79
Printing	161	6 0	1.46	48 6 0	235.05
Note	130	3 4	.81	21 13 4	105.44
Almasso	143	6 0	1.46	42 18 0	208.77
Ordinary	1,380	3 0	.73	207 0 0	1,007.36
Blotting	97	10 1	2.45	48 17 11	237.95
Total	2,107			564 6 3	2,746.20

NOTE.—The cost of paper varies in accordance with the prices of the contract for each year.

JOHN H. GROUT, Jr.,
Consul.

VALLETTA, *February 18, 1899.*

NETHERLANDS.

POPULATION.

The population, according to last census, was 5,000,000. The percentage of illiterates is 5 per cent, according to latest educational report. The people are readily educated, but are not inventive.

CONSUMPTION.

Paper is used for newspapers, books, lithographic purposes, commercial packing, bags, and cardboard boxes.

Butter making and weaving are the principal industries peculiar to the country requiring paper. Paper used is of an inferior quality, of wood pulp or clay; imitation parchment, grease proof.

The post, royal, and foolscap varieties correspond to the universal scale. Others are distinctly Dutch.

The terms of sale are three months' credit, net; from 3½ to 7 per cent discount for cash.

There are 5 waste-paper dealers; 24 wholesale paper merchants, manufacturers, and dealers; 29 agents and makers of paper boxes and bags; 4 wholesale dealers in packing paper; total, 62 in Amsterdam. Fifty smaller firms are scattered in northern Holland. The principal ones are Van Gelder Sons, Amsterdam; Royal Dutch Paperworks, Maastricht.

There are some 312 publications in Amsterdam and about 200 in the remainder of the country. The number of printers is as follows:

Amsterdam	119
Arnhem and Apeldoorn	18
Alkmaar	24
Dordrecht and Deventer	32
Gonda and Goes	15
Groningen	25
Haarlem	22
Leemvarden	16
Total	271

The chief articles manufactured from paper, etc., are strawboards and cheap printings. The consumption of paper is increasing.

The nationalities dominating the paper trade are Germany, Belgium, England, America, and France.

PRODUCTION.

There is no undeveloped water power. Railway communication is poor. The navigable water ways are perfect.

Raw pulp comes from Scandinavia; rags and straw, local; fibers, from Dutch India.

Coal costs, put down, from 14s. to 15s. ($3.40 to $3.65) per ton. The bulk is brought from Westphalia by rail or boat.

There are no trees and fibers suitable for paper making. Straw, rags, and waste are plentiful.

There are no facilities for making paper machinery.

Labor in paper mills is paid from 7 to 12 florins ($2.81 to $4.82) per week. Skilled and expert labor averages from 18 to 24 florins ($7.23 to $9.65); never more. There are only two paper mills of importance. They use steam and electricity. The paper is handmade for the greater part. The processes and methods of manufacture are distinctly modern. The tendencies of production are to compete for home consumption with Germany and Belgium.

IMPORTS.

News paper, brown, writing, antiques, and book paper is imported. The news paper costs 8, 10, 11½, and 12 Dutch cents per kilogram (3⅕, 4, 4⅗, and 4⅘ cents per 2.2 pounds). Antiques (English writing) 25 to 35 Dutch cents per kilogram (10 to 14 cents per 2.2 pounds).

The countries from which the imports come are:

Country.	1896.		1897.		1898.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*	*Kilograms.*	*Pounds.*
Belgium	6,953,000	15,296,600	9,694,000	21,326,800	9,915,000	21,813,000
Germany	65,079,000	143,173,800	71,658,000	157,647,600	58,524,000	128,752,800
Other countries	6,512,000	14,326,400	9,160,000	20,152,000	8,428,000	18,541,600
Total	78,544,000	172,796,800	90,512,000	199,126,400	76,867,000	169,107,400

The import duty on all classes is 5 per cent ad valorem.

Mail facilities with each country are: Belgium, 3 hours, 5 mails per day; Germany, 6 hours, 3 mails per day; France, 6 hours, 3 mails per day; England, 12 hours, 2 mails per day; United States, 10 days, 2 mails per week.

Germany stands first in the trade; she sends travelers, posts samples, gives quotations (including carriage and duty). Belgium is represented by local houses. England sends a few travelers; France and the United States send none.

There may be openings for American paper in news, book, art printings, and lithographs of good quality only. There is no room for common grades. The sending of traveling men with catalogues and samples when convenient is the best way to build up a trade.

EXPORTS.

Handmade paper and strawboards, as well as cheap printing paper, are exported. Prices vary according to quality. England takes the largest amount, averaging £40,000 ($194,660) per month.

Banking facilities with each country are by draft or bills of exchange at current rates. There are no export duties. Telegraphic facilities with each country to which paper is sent are, per word: Belgium, 2½ cents* (1 cent); Germany, 6½ cents (2⅗ cents); France, 8 cents (3⅕ cents); England, 10 cents (4 cents). All night service.

The quantities of exports in 1896, 1897, and 1898 were:

Country.	1896.		1897.		1898.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*	*Kilograms.*	*Pounds.*
Great Britain					107,271,000	235,996,200
Belgium					19,054,000	41,918,800
France					11,000	24,200
Hamburg					3,963,000	8,718,600
East Indies					2,197,000	4,833,400
Germany					5,551,000	12,212,200
Other countries					4,895,000	10,769,000
Total	121,693,000	267,724,600	145,994,000	321,186,800	142,942,000	314,472,400

GEORGE J. COREY,
Consul.

AMSTERDAM, *March 20, 1899.*

RUSSIA.

ST. PETERSBURG.

PRODUCTION.

There are 558 paper mills in Russia, whose annual production amounts to 51,710,000 rubles ($26,630,650), furnishimg employment to 39,363 workmen. The principal varieties are news and writing paper, value of the various kinds being:

News	$15,278,505
For bookbinding	3,256,860
Pitched paper for roofing	1,420,885
Wall paper	1,458,995
Cardboard	1,077,895
Cigarette wrappers	1,897,775

Russia is the richest country in rags, especially linen, as linen textiles are used even by the lower classes, and considerable quantities were formerly exported to other countries; but, in order to encourage manufacture of paper, an export duty of $9.58 per ton has been placed on rags, while they are imported free.

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* The charges in parentheses are United States cents; the others, Dutch cents.

The following table shows the development of wood-pulp factories and paper mills in Russia during the last fifteen years:

Year.	Wood-pulp factories.			Paper mills.		
	Number of factories.	Production.	Number of workmen.	Number of factories.	Production.	Number of workmen.
1880	7	$50,470	123	171	$6,491,575	13,149
1885	19	257,500	369	164	8,427,975	15,958
1890	19	268,315	437	155	9,757,190	17,678
1896	22	207,030	297	184	17,360,135	18,184

The principal wood-pulp factories are in the governments of Vilna, Volhynia, Novgorod, St. Petersburg, and Estland.

Russia produces over 9,677 tons of wood pulp, estimated at about $39.91 per ton. There are 6 cellulose factories in Russia, excluding Finland, whose production is about 16,129 tons, the average price for bleached being from $79.83 to $95.79 per ton, and for unbleached about $63.86 per ton.

There is 1 cellulose factory in each of the governments of St. Petersburg, Lifland, Novgorod, Moscow, Vologda, and Vitebsk. While European Russia in its northern and eastern parts is rich in timber, the absence of cheap motive power has prevented the development of the wood-pulp and cellulose industry to an extent equal to the requirements of the interior, the excess being drawn from Finland.

Paper mills are principally situated in the governments of St. Petersburg, Kaluga, Warsaw, Finland, and Tver, which manufacture the various grades of goods, except fine stationery, sold in the market. A large percentage of wood pulp and cellulose is used in the northern and western paper-producing regions, more than in the southern governments, such as Kursk, Orel, Voronezsh, and Kharkof, which are still so rich in linen rags that they require no substitutes.

There are 15 paper mills in Finland, operating 30 improved machines, owned by Germans and English, which manufacture news, letter, wrapping, and wall paper. The workmen in these mills receive 2 to 5 marks per day.

There are 57 cardboard factories in Russia, whose production in 1896 amounted to $1,077,946.50, furnishing employment to 1,945 workmen. The cardboard is made from straw and wood pulp and is protected by a duty of 90 copecks per pood ($28.74 per ton).

Russia produces all kinds of paper, but the middling and lower grades are in greater demand. The better grades are imported from England, the United States, and Germany.

Russian paper made from wood pulp is not so strong as that made in Germany.

The following table will show the increase in the production of wall paper:

Year.	Number of factories.	Production.	Number of workmen.
1880	32	$661,260	1,484
1885	22	627,785	1,292
1890	26	803,915	1,233
1896	29	1,458,995	1,831

The paper is produced by workmen who have graduated at the technical schools for drawing, and is excellent in quality and design.

The following table shows the production of other articles of the paper industry, the number of mills, and workmen employed:

Articles.	Mills.	Production.	Workmen.
	Number.		*Number.*
Cigarette wrappers and paper	169	$1,897,775	8,186
Wrapping paper	45	1,003,735	1,794
Envelopes	15	332,175	455
Cardboard	57	1,077,895	1,945
Boxes	33	337,840	890
Bookbindings	77	3,256,860	4,035
Paper roofing	20	1,420,885	788
Sundry goods	31	565,985	991

There is a tendency to improve all branches of paper manufacture by the introduction of improved machinery. Cigarette wrappers are now made by machinery, and in binding office books great proficiency has been attained. The only work done by hand is the manufacture of fine boxes.

IMPORTS.

The import of wood pulp into Russia from January 1 to October 1, 1898, amounted to 27,887 tons, valued at $1,137,635.

The following table shows the import of same during the years 1892–1896:

Year.	Quantity.	Value.
	Tons.	
1892	14,226	$667,440
1893	15,419	766,320
1894	24,371	1,309,645
1895	27,000	1,385,350
1896	31,290	1,461,055

In 1897, 34,548 tons of wood pulp and cellulose, valued at $1,437,365, were imported into Russia over the European frontier; wood pulp coming from Austria, Germany, Great Britain, Finland, Sweden, and Norway, and cellulose from Austria, Belgium, Germany, Denmark, Finland, France, and Norway. More than half of the wood pulp imported into Russia comes from Finland, but the amount of cellulose imported from Finland forms only one-fourth of the total. The import duty on wood pulp, cellulose, etc., is as follows:

	Per ton.
Wood pulp	$6.39
Cellulose	11.17
Wood pulp pressed into sheets	11.17
Pasteboard	$76.63 to 105.37
Wall paper	287.37

The following table will show the amount of the various kinds of paper imported:

Articles.	1894.	1895.	1896.	1897.	January 1 to October 1, 1898.
Pressed wood pulp	$149,865	$425,390	$595,340	$565,895	$499,035
Cardboard	462,985	455,260	437,235	77,765	59,740
Paper	1,233,425	1,460,540	1,791,170	1,960,090	1,477,020
Writing paper	554,140	718,940	698,340	735,935	508,305
Wall paper	57,680	66,950	87,550	76,735	72,100
Bindings and boxes	40,685	46,350	64,375	71,585	54,590
Total	2,498,780	3,173,430	3,674,010	3,588,005	2,670,790

Pitched cardboard for roofing is manufactured in considerable quantities in the St. Petersburg and Warsaw governments, but not enough to meet the home demands. As a consequence, a large amount is imported, paying a duty of 60 copecks per pood ($15.96 per ton). It is difficult to determine the quantity imported, as the custom-house statistics classify it with cardboard in general.

The average price for news print in St. Petersburg during the past year has been 7 copecks per Russian pound (about 3½ cents per pound).

W. R. Holloway,
Consul-General.

St. Petersburg, *March 8, 1899.*

MOSCOW.

The first paper was manufactured in Russia about two hundred years ago. There are at present 558 factories making paper, employing nearly 40,000 workmen. There are 83 factories for the manufacture of paper specially used for printing newspapers, etc., producing 29,700,000 rubles' ($14,850,000) worth. The capacity of these factories per annum is from 25,000 to 1,800,000 rubles ($12,300 to $900,000).

The principal factories and their produce are as follows:

Government.	Annual produce.	
	Rubles.	
St. Petersburg	12,384,000	$6,192,000
Warsaw	4,805,000	2,402,500
Moscow	7,534,000	3,767,000
Kaluga	2,935,000	1,467,500
Livland (Baltic)	2,773,000	1,386,500
Novgorod	2,582,000	1,291,000
Petri-Kau (Poland)	2,579,000	1,289,500

The industry is growing so rapidly in Russia that the imports are very small. They come from Germany, Austria, England, Sweden, and a little from the United States. From Japan, Russia imports paper for cartoons, drawing paper, etc., to the value of 250,000 rubles ($125,000) annually.

In 1897, wood surrogate was imported to the value of 1,395,500 rubles ($697,750) and wood cellulose to the value of 1,882,000 rubles ($941,000). In Russia there are the following cellulose factories:

Location.	Annual production.	
	Rubles.	
St. Petersburg district	535,000	$267,500
Lifland (Livaina)	411,000	205,500
Novgorod	227,000	113,500
Moscow and Vologda	211,000	105,500
Viteksk	120,000	60,000

The prices are: For bleached cellulose, $1.25 per 36 pounds; unbleached cellulose, $1.50 per 36 pounds.

German imported paper is superior to the Russian product, this being generally of medium and low quality. There is not a very large market for fine blotting paper. Russia makes all sorts of blotting paper of different colors, the cheap sorts being always in demand.

THOMAS SMITH,
Consul.

MOSCOW, *March 3, 1899.*

WARSAW.

The total population in the Kingdom of Poland is about 8,000,000. Paper is used for printing books and journals, for writing purposes, for blotting, etc. There are no special uses for paper pulp. The classes or kinds of paper in use are: Concept, legal, letter, bristol, register, blotting, copy, cigarette; packing, from lowest to the highest grade, handmade; envelope, tissue, and others.

The prices in the market vary from 6 copecks (3 cents) per pound of wrapping paper up to 1 ruble (51.5 cents) per pound of handmade. During the last five years there has been a depreciation in prices of 20 to 25 per cent, caused by overproduction.

Wholesale terms are generally six to eight months' credit.

It is not possible to give yearly consumption, as the factories do not make reports, and there are no other statistics on the subject.

There are in Poland 8 large paper factories and about 40 small ones with water power. The largest factory has a gross income of 1,750,000 rubles ($901,250) per year. There are many paper dealers, but the number is unknown. The principal paper factories are at Czgstochowa, Poraj, Novoradomsk, Pabianice, Soosewka, near Plaek; Pilica, on the River Pilica; Jeziorna, near Warsaw. There are no journals treating of the subject.

In the city of Warsaw there are about 20 large printing offices, besides newspapers. No foreigners can follow the printing business in this country. There are about 20 publishers.

The increase in production of paper is gradual, and depends upon the number of schools and commerce in general.

The import of paper is mostly from Germany, and consists of letter paper, colored and fancy. On account of the constant change of fashion and the small demand for fancy paper, the local factories do not make it.

PRODUCTION.

Poland is a flat country, with no large rivers but the Vistula, which is not regulated, and therefore yields no available water power.

The fuel mostly used in the factories here consists of coal and peat. Coal at the collieries costs 40 copecks (20.6 cents) for 100 kilograms (220.46 pounds) and the freight from the mines to Warsaw costs about the same.

Labor costs from 50 copecks to 1 ruble (25.7 to 51.5 cents) per day, and in summer time is very scarce.

Most of the large factories use modern machinery. Steam power is mostly employed. Of late, tissue paper has been manufactured here in large quantities.

Postal communication with France or England takes forty-eight hours.

Materials for manufacturing all kinds of paper, as cellulose, etc., are imported from foreign countries.

There is no export of paper from Poland.

JOSEPH RAWICZ,
Consul.

WARSAW, *July 19, 1899.*

SWEDEN.

GOTHENBURG.

POPULATION.

The population of Sweden was 4,962,568 in January, 1896. The present population is somewhat above 5,000,000. Of the persons above 10 years old, only 0.6 per cent are unable to read and write. By reason of influx from the country, the urban population is increasing more rapidly than the population of the rural districts.

The mechanical traits of the people are very prominent, but can not always be shown to advantage by reason of the comparatively small population and limited resources of the country, particularly the want of coal, which is so necessary for industries on a large scale. It has been said that the Swedes are very quick to adopt everything that is new, but that they often lose the inclination to follow it up. In business, new enterprises, etc., which might involve loss of money, they are as a rule very careful, and foreigners often have to show them the way.

SOURCES OF STATISTICS.

As no statistics are available for this consular district alone, it has been necessary to render the following report for the whole of Sweden. All the figures as to production, motive power used, import, and export have been taken from the official statistics published yearly by Kommerskollegium (the board of trade) in Stockholm, under the name of Bidrag till Sveriges Officiela Statistik, divided as follows: (*c*) Mining, (*d*) factories and manufactures, (*e*) domestic trade and shipping, (*f*) foreign trade and shipping.

The names of the paper mills, their locations, different productions, etc., have been obtained from Svensk och Norsk Pappers-kalender, 1898, published by Göteborgs Litografiska Aktiebolag, of Gothenburg; price, 3.50 kronor (94 cents).

PRODUCTION.

Factories in Sweden producing paper, pasteboard, and manufactures of same.

Year.	Number of mills.	Number of motors.		Calculated horsepower of motors.	Number of machines and implements.	Value of production.
		Water.	Steam, hot air, etc.			
1892	53	181	89	14,472	1,507	$2,981,493
1893	59	202	83	16,740	1,559	3,011,076
1894	57	214	95	18,327	1,564	3,392,425
1895	55	207	77	18,613	1,577	3,577,596
1896	50	256	94	20,377	....	3,813,608

The motors used by the 50 paper and pasteboard mills during the year 1896 may be specified as follows:

Description.	Number.	Horse-power.
Water wheels or turbines	256	17,354
Steam engines	71	2,426
Electric motors	14	450
Gas or petroleum motors, etc	9	*147
Total	350	20,377

* Incomplete returns.

Manufactures of paper, etc.

Articles manufactured.	1892.		1893.		1894.	
	Number of factories.	Value of production.	Number of factories.	Value of production.	Number of factories.	Value of production.
Bookbinders' products	15	$273,877	15	$315,974	16	$372,654
Playing cards	2	68,873	2	26,823	2	31,310
Paper bags and envelopes	5	102,411	8	139,889	9	164,414
Lithographic and chemigraphic works	19	452,314	21	474,455	*21	*441,548
Wall paper (paper hangings)	7	216,790	7	249,141	6	242,257
Portfolios, etc	3	16,371	3	19,198	3	21,634
Paper boxes	6	48,308	6	47,784	7	53,279
Total	57	1,178,944	62	1,273,264	64	1,027,096

Articles manufactured.	1895.		1896.	
	Number of factories.	Value of production.	Number of factories.	Value of production.
Bookbinders' products	19	$387,510	24	$450,046
Playing cards	2	33,543	2	36,304
Paper bags and envelopes	9	174,220	8	182,815
Lithographic and chemigraphic works	23	531,670	26	502,066
Wall paper	6	284,035	5	216,515
Portfolios, etc	4	21,638	15	116,608
Paper boxes	12	70,400		
Total	75	1,503,016	80	1,504,354

* Incomplete return.

PRINTERS.

Before the year 1896, the printers were classified as artisans, and the official statistics give their number for the last five years as follows:

Year.	Number of printers.	Number of hands employed.	Total.
1892	180	2,667	2,847
1893	201	3,004	3,205
1894	205	3,194	3,399
1895	199	3,469	3,668
1896	261	4,552	4,813

From and with the year 1896, the larger printing establishments are counted together with the factories. Besides those given in the above table, the statistics for the year 1896 also mention printers as artisans and give their number as follows: Printers, 54; number of persons employed by them, 98. This makes the total number of printers 315, and the number of persons employed by them 4,650, or a grand total of 4,965 persons engaged in the printing business during the year 1896, under the supposition that each printing office was owned by one person only.

PUBLICATIONS.

I have not been able to ascertain the number of publications of all kinds in Sweden; in proportion to the population of the country, their number is, however, considerable. The most prominent publishers live in Stockholm.

The newspapers and periodicals published in Sweden which may be ordered through the post-offices number about 670. Of these, 2 are issued twelve times a week, 4 seven times a week, 42 six times a week, 53 three times a week, 17 four times a week, 150 once a week, 90 twice a week, 80 once a month, etc. I have not been able to ascertain the extent of their circulation or the number of their subscribers. The ordinary newspapers seldom exceed eight pages each.

SWEDISH PAPER MILLS.

Aktiebolaget Nyqvarn.—Owned by a company; capital stock, 250,000 kronor ($67,000) minimum, 700,000 kronor ($187,600) maximum; managing director, E. C. Gjestvang; location, parish of Turinge, county of Stockholm, 12 kilometers (7.5 miles) from Södertelge; post-office address, Stockholm; communications, railroad; motive power, steam and water; amount of power, about 300 horsepower; number of paper machines, 3; number of maceraters, 6; manufactures paper for books, pamphlets, and newspapers, colored paper, elephant, duplex, and enameled paper, enamel pasteboard and "natural" pasteboard; yearly production, about 3,500 tons; value of yearly production, about 800,000 kronor ($214,400).

Aktiebolaget Papyrus.—Owned by a company; capital stock, 1,000,000 kronor ($268,000); manager, G. Danielson; location, 8 kilometers (5 miles) from Gothenburg; post-office address, Mölndal; communications, railroad by branch line from Fässberg station; manufactures printing paper, writing paper, colored paper, and wrapping paper.

Bäckhammars Cellulosafabrik och Pappersbruk.—Owners, Bäckhammars Nya Aktiebolag; capital stock, 160,000 kronor ($42,880); manager, Hugo Berger; location, in county of Vermland, 10 kilometers (6.2 miles) from Björneborg railroad station, 10 kilometers from the loading wharf at Hult, and 20 kilometers (12.4 miles) from Kristinehamn; post-office address, Vermlands Björneborg (Sweden); communications, steamers from Hult and railroad from Björneborg; motive power, water and steam; amount of power, 200 effective horsepower; number of paper machines, 2; number of pulp boilers, 3; number of maceraters, 7; manufactures cellulose paper, about 1,500 tons per year.

Emsfors Pappersbruk.—Owners, Emsfors Pappersfabriks Aktiebolag; capital stock, 145,700 kronor ($39,048); managing director, Mauritz Linder; manager of the mill, Philip Kreuzer; location, county of Kalmar; post-office address, Påskallavik; communications, 2 kilometers from the harbor of Påskallavik (from which steamship connections with Gothenburg, Malmo, etc.), 13 kilometers (8 miles) from Forshult railroad station, and 22 kilometers (13.7 miles) from Oskarshamn; motive power, water and steam, the latter only for the paper machines; amount of power, 3 turbines of 60 horsepower each, 2 steam engines of 12 and 15 horsepower, respectively; number of paper machines, 2; number of boilers, 1 sulphite boiler and 1 wood boiler; number of maceraters, 9; number of grinding machines, 2; manufactures all kinds of wrapping paper, paper for match boxes, paper for envelopes and paper bags, sheathing and roofing pasteboard, fly-leaf paper, bookbinders' pasteboard, also mechanical pulp for own use and about 300 tons yearly of sulphite pulp also for own use; amount of production per year, about 900 tons of paper; value of production per year, about 160,000 kronor ($42,880).

*Fiskeby Pappersbruk.**—Owners, Fiskeby Fabriks Aktiebolag; managing director, G. Årre; location, close by Motala stream and Fiskeby railroad station; post-office address, Fiskeby; motive power, water and steam; amount of power, 400 horsepower; numberof paper machines, 5 for paper and 1 for pasteboard; number of grinding machines, 1; number of pulp boilers, 5; number of maceraters, 16; manufactures wall paper, printing paper, and wapping paper, asphaltum paper, sheathing and roofing paper, straw pasteboard, mechanical pulp; amount of production per year, 2,265 tons; value of production per year, about 700,000 kronor ($187,600).

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*Direct figures concerning the mill have not been obtainable for the latest issue of Svensk och Norsk Papperskalender, but have been taken from former issues or have been obtained from reliable persons.

*Forssa Pappersbruk.**—Owners, Bruksbolaget Carl Dan. Indebetou (several shareholders); manager, Robert Almgren; location, 12 kilometers (7.5 miles) from Katrineholm railroad station and 8 kilometers (5 miles) from Strångsjö railroad station; post-office address, Katrineholm; power, water; amount of power, about 15 horsepower; manufactures blotting paper, filtering paper, writing paper, wrapping paper, and pasteboard for paper boxes and tags; number of tubs, 1; amount of production per year, about 20 tons; value of production per year, 15,000 to 20,000 kronor ($4,020 to $5,360). The paper is made by hand.

Fredrikströms Bruk.—Owner, Franz Fagerström; location, in the county of Kalmar, 3 kilometers (1.9 miles) from Trekanten railroad station; post-office address, Trekanten; communications, railroad; manager, Anders Fagerström; motive power, water and steam; amount of power, 60 horsepower; number of paper machines, 1; number of pulp boilers, 1; number of maceraters, 4; number of grinding machines, 1; manufactures paper used for match boxes.

Gransholms Pappersbruk.—Owner, J. L. Aschans Sterbhus; location, in county of Kronoberg, 4 kilometers (2.5 miles) from Gemla railroad station; post-office address, Gemla; manager, Per A. Lindman; motive power, water and steam; amount of power, about 250 horsepower; number of paper machines, 1; number of pulp boilers, 2; number of maceraters, 7 for comminution and 7 for bleaching; number of refiners, 1; manufactures better classes of printing paper, writing paper, blotting paper, and colored paper; amount of production, 700 tons per year; value of production, 250,000 kronor ($67,000) per year; manufactures also bleached straw cellulose for own use.

Grycksbo Pappersbruk.—Owners, J. H. Munktells Pappersfabriks Aktiebolag; capital stock, 1,000,000 kronor ($268,000); manager, Henrik Munktell; location, in county of Stora Kopparberg, 12 kilometers (7.5 miles) from the town of Falun, at Grycksbo railroad station; post-office address, Grycksbo; communications, railroad; manager of the mill, A. Ramström; motive power, water and electric power transmissions; amount of power, 550 effective horsepower; number of paper machines, 3; number of pulp boilers, 3; number of macerаters, 18; number of tubs, 4 (holding pulp for the paper made by hand); manufactures paper for art prints, printing paper, writing paper, wrapping paper, etc.; amount of yearly production, about 2,500,000 kilograms (5,511,500 pounds).

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Gustafsfors Pappersbruk.—Owners, Gustafsfors Fabrikers Aktiebolag; manager, Joh. Ekman; location, in the county of Elfsborg, at Dalslands Canal, 25 kilometers (15.5 miles) from Bengtsfors railroad station; post-office address, Gustafsfors; motive power, water; amount of power, 250 effective horsepower; number of paper machines, 1; number of pulp boilers, 3; number of maceraters, 4; manufactures strong wrapping paper of pure cellulose; yearly production, 600 tons.

Gölpa Pappersbruk.—Owner, Baron C. Raab; location, in the county of Kalmar, 30 kilometers (18.6 miles) from Westervik; post-office address, Gölpa, Werkebäck; communications, water way to the city of Westervik; tenant, C. Lindholm; power, water; amount of power, 50 horsepower; number of paper molds, 6 pairs; number of maceraters, 2; number of pulp tubs, 1; number of calenders, 1; number of presses, 3; the paper is air dried; manufactures pasteboard for books, sheathing paper, herbarium paper, wrapping paper of several kinds, pressing board, stuffing for bed clothes; value of yearly production, 8,000 kronor ($2,144). The paper is made by hand, rags only being used as raw material.

Hannebols Trämassefabrik.—Owners, Hannebols Trämassefabriks Aktiebolag; capital stock, 100,000 kronor ($26,800); managing director, J. A. Anderson, Gothenburg; location, in the county of Elfsborg, 6 kilometers (3.7 miles) from Tösse railroad station; post-office address, Tösse; power, water and steam; amount of motive power, 280 horsepower; number of paper machines, 2; number of pulp boilers, 2; number of maceraters, 4; number of grinding machines, 1; manufactures wood pulp for own use and better kinds of wrapping paper (specialty), "strength" paper and "duplex" paper; yearly production, 1,200 tons; value of yearly production, 250,000 kronor ($67,000). The managers of the company reside in Gothenburg.

*Hofveruds Pappersbruk.**—Owners, Håfreströms Aktiebolag, of Gothenburg; capital stock, 300,000 kronor ($80,400); location, in the province of Dalsland; communications, water way to Gothenburg; post-office address (to the mill), Upperud; production, printing paper; number of paper machines, 1. The company has offices in Gothenburg.

Holms Vadd and Pappersfabrikers Aktiebolag.—Owned by a company; capital stock, 20,000 kronor ($5,360); manager, A. Wevertz; location, in the county of Östergötland, 2 kilometers (1.2 miles) from the town of Motala; post-office address, Motala; communications, railroad and steamers; motive power, water; amount of power, 40 horsepower; number of pulp boilers, 1; number of maceraters, 3; manufactures mass and paper for the filtering of beer, blotting paper, pasteboard, and paper; value of yearly production, 30,000 kronor ($80,400).

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Holmens Pappersbruk.—Owners, Holmens Bruks och Fabriks-Aktiebolag; capital stock, 2,400,000 kronor ($643,200); manager, Hugo Wulff; location, city of Norrköping; communications, railroad and steamers; engineer, G. Hartzell; foreman, E. Muntzing; motive power, water; amount of power, 1,600 horsepower; number of paper machines, 3; manufactures writing paper, draft or copy paper, and printing paper; production (year 1896), 6,675,944 kilograms (14,720,456 pounds); value of production (1896), 1,744,792 kronor ($467,604).

Hällefors Pappersbruk.—Owner, Aug. B. Kollen; location, in the cunty of Kalmar, 2 kilometers (1.2 miles) from Lönneberga railroad station; post-office address, Mariannelund; communications, railroad; motive power, water and steam; amount of power, 300 horsepower; number of paper machines, 2; number of pulp boilers, 2; number of maceraters, 9; number of grinding machines, 1; manufactures wrapping paper, parchment paper, and grease-proof paper; production per year, about 1,200 tons.

Katrinedals Pappersbruk.—Owner, A. O. Anderssons Fabrikers Aktiebolag, of Venersborg; managing director, W. von Nolting; location, 4 kilometers (2.5 miles) from Engebacken railroad station and 6 kilometers (3.7 miles) from the city of Uddevalla; post-office address, Engebacken; manager of the factory, F. F. Branzell; motive power, water; amount of power, 20 horsepower; number of tubs, 2; manufactures writing paper, wrapping paper, blotting and filtering paper, pasteboard, etc. The paper is made by hand.

Katrinefors Pappersbruk—Owners, Katrinefors Aktiebolag; manager, Gustaf Grevilli; location, in the county of Skaraborg, 1 kilometer (0.62 mile) from Mariestad railroad station; post-office address, Mariestad; communications, own railroads to the town of Mariestad, thence by railroad and by steamers; engineer, Erik Asker; foreman, C. Johanson; motive power, water and steam; amount of power, 600 horsepower; number of paper machines, 4; number of pulp boilers, 6 for sulphite cellulose, 3 for straw, and 1 for rags; number of maceraters, 20, and 6 centrifugul maceraters; number of grinding machines, 2; manufactures paper for match boxes, colored and uncolored wrapping paper, wrapping paper for bottles and for butter, etc., paper bags, sulphite cellulose or pulp for own use, and mechanical pulp for own use; production, about 3,000 tons of paper per year. The company has branch office in Gothenburg.

Klippans Pappersbruk.—Owners, Klippans Pappersbruks Aktiebolag; capital stock, 600,000 kronor ($160,800); managing director, P. Hultner; location, in the county of Christianstad, 1.5 kilometers (0.93 mile) from the Klippan railroad station; post-office address, Klippan; communications, Helsingborg-Hessleholm Railroad; motive power, water and steam; number of paper machines, 2; number of pulp boilers, 4; number of maceraters, 31; number of pulp tubs, 4; manufactures handmade paper and better classes of writing and printing paper, chiefly from rags; value of yearly production, about 700,000 kronor ($187,600). This paper mill was built in the year 1573 by Tycho Brahe, and is the oldest paper mill in the north.

Konga Aktiebolag.—Owner, a company; capital stock, 345,000 kronor ($92,460); manager, W. Waern; location, in the county of Kronoberg, close by Konga railroad station; post-office address, Konga; communications, direct railway connections with the cities of Ronneby and Wexiö; motive power, water; amount of power, 250 effective horsepower; number of paper machines, 1; number of pulp boilers, 3; number of maceraters, 3; number of drying machines, 1; manufactures paper for paper bags, wrapping paper, and sulphite pulp; yearly production, 2,700 tons (paper and sulphite); value of yearly production, 400,000 to 600,000 kronor ($107,200 to $160,800).

Koppoms Pappersfabriks Aktiebolag.—Owned by a company; capital stock, 155,000 kronor ($41,540); manager, Fr. Canell; location, in the county of Vermland, 20 kilometers (12.4 miles) from Åmot railroad station; post-office address, Åmot; communications, by water from Sulvik and by railroad from Åmot; motive power, water; amount of power, 635 effective horsepower; number of paper machines, 1; number of pulp boilers, 2; number of maceraters, 3; number of grinding machines, 3; manufactures calendered and uncalendered brown wrapping paper, called Havana, and mechanical pulp; yearly production, 1,227 tons; value of yearly production, 200,000 kronor ($53,600).

*Lagerfors Pappersbruk.**—Owner, W. Unden; post-office address, Moholm; manager, G. Unden. The paper is made by hand.

Lessebo Pappersfabriker.—Owners, Lessebo Aktiebolag; managing director, John Engström; location, at Lessebo railroad station, 34 kilometers from the city of Wexiö; post-office address, Lessebo; communications, railroad; shipping port, Karlskrona; manager of the factory, David Fielding; motive power, water and steam; amount of power, about 300 effective horsepower; number of paper machines, 1; number of vats, 8; number of maceraters, 4 for mixed raw material, 13 for rags only, and 4 for bleaching; manufactures better qualities of writing paper, printing paper, and blotting paper; production per year, from 1,000 to 1,200 tons. The plant is now being increased by 1 machine and 6 new vats. The paper is made by machinery and by hand.

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*Lilla Edets Pappersbruk.**—Owner, Emil Haeger, engineer; location, at Göta River, 53 kilometers (33 miles) from Gothenburg, 32 kilometers (20 miles) from Uddevalla, and 37 kilometers (23 miles) from Venersborg; post-office address, Lilla Edet; communications, steamers to Gothenburg and other places; motive power, water; amount of power, 4,500 horsepower, which can be increased considerably if needed; number of paper machines, 6 (whereof 5 are with single cylinders); number of maceraters, 16, and 1 Marshall macerater; number of grinding machines, 10 of 200 horsepower each; manufactures brown wrapping paper made of steamed and ground spruce and pine, calendered wrapping paper, paper for paper bags, etc.

*Lindbacka Pappersbruk.**—Owner, J. Cederholm; post-office address, Örebro; motive power, water; number of maceraters, 3; production, about 75 tons (handmade) paper per year; value of yearly production, about 17,000 kronor ($4,556).

*Lisefors Pappersbruk.**—Owners, Lisefors Pappersbruks Aktiebolag; managing director, Uno Troili; location, in the county of Elfsborg, 12 kilometers from Tösse railroad station; post-office address, Tösse; communications, railroad, steamer to Vensberg, on the Lake Venern; motive power, water; amount of power, about 300 effective horsepower; number of paper machines, 1; number of grinding machines, 1; number of maceraters, 3; manufactures printing paper for books and for newspapers, blotting paper, wrapping paper, and mechanical pulp; yearly production, 900 tons of paper and 500 tons of mechanical pulp; value of yearly production, about 200,000 kronor ($53,600).

Ljusfors Pappersbruk.—Owner, J. A. Hedenström, Norrköping; location, in the county of Östergötland, 18 kilometers (11 miles) from Norrköping; post-office address, Norrköping; communications, by railroad from Skärblacka railroad station, 1.5 kilometers (0.93 mile) from the mill, also steamers to Eksund; engineer, Sven Dan. Bergman; foreman, A. O. Engström; motive power, water; amount of power, 1,500 horsepower; number of paper machines, 1; number of maceraters, 7; number of grinding machines, 2; number of refining machines, 1; number of receiving machines, 2; manufactures wall paper, sheathing paper, printing paper, wall pasteboard, and mechanical pulp for own use.

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*Långasjönäs Pappersbruk.**—Owner, S. P. A. Björkman, Asarum, Karlshamn; post-office address, Asarum; location, 8 kilometers (5 miles) from the city of Karlshamn and 4 kilometers (2.5 miles) from the Asarum railroad station; motive power, water; amount of power, 50 effective horsepower; manufactures handmade writing, blotting, and filtering paper, strong wrapping paper, flower paper, and several kinds of heavy paper made of rags. The paper is made by hand.

Långeds Fabrik.—Owners, Långeds Aktiebolag (board of managers in Gothenburg); capital stock, 600,000 kronor ($160,800); managing director, Carl Wijk, merchant, Gothenburg; manager of the mill, C. E. Wallquist; location, in the county of Elfsborg, 5 kilometers (3 miles) from Dingelvik railroad station at Dalsland Canal; post-office address, Långed; communications, by railroad and by canal; motive power, water; amount of power, about 1,100 horsepower; number of paper machines, 2 for paper and 1 for taking up of sulphite; number of boilers, 1 sulphite boiler; number of macerаters, 7; number of grinding machines, 7; number of refining machines, 2; manufactures printing paper and middles, mechanical and chemical pulp for own use; production, 2,600 tons per year.

*Mariedals Pappersbruk.**—Owner, P. A. Wiström; tenant, O. Carlson; location, 10 kilometers (6.2 miles) from the town of Vimmerby, on the eastern coast of Sweden; post-office address, Mariannelund; motive power, water; amount of power, about 10 horsepower; number of pulp tubs, 1; number of maceraters, 1; manufactures about 30 tons of handmade paper and pasteboard per year; value of yearly production, about 7,000 kronor ($1,876). The paper is made by hand.

Mossnäs Pappersbruk.—Owner, P. A. Wiström; post-office address, Mariannelund. The paper is made by hand.

Munkedals Aktiebolag.—Owners, Munkedals Aktiebolag; capital stock, 500,000 kronor ($134,000); manager, Alb. Carlander; location, in the province of Bohuslän, western Sweden, 5 kilometers (3 miles) by railroad to Munkedal; shipping place, at Gullmar-fjord; post-office address, Munkedal; communications, twice a week by steamer to Gothenburg; engineer and foreman, W. Hesslin; motive power, water; amount of power, 1,500 horsepower; number of paper machines, 5; number of pulp boilers, 15; number of maceraters, 19; number of grinding machines, 9; number of refining machines, 10; manufactures paper and pasteboard of several kinds; yearly production, about 4,500 tons; value of yearly production, 1,000,000 kronor ($268,000).

Munksjö Aktiebolag.—Owners, Munksjö Aktiebolag; capital stock, 700,000 kronor ($187,600); president, V. Billmanson; location, city of Jönköping; communications, railroad and steamers; technical director, R. Wieselgren; motive power, steam and power transmissions; amount of power, about 900 horsepower; number of paper machines, 9; number of pulp boilers, 29; number of maceraters, 28; manufactures wrapping paper and building paper; yearly production, 5,783,218 kilograms; value of yearly production, 1,507,000 kronor ($403,876).

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Nyqvarns Pappersbruk.—Owner, A. A. Westelius; location, 9 kilometers (6 miles) from Bohult railroad station, 15 kilometers (9.3 miles) from Mönsterås; post-office address, Fliseryd; communications, railroad from Bohult, steamers from Mönsterås and Oskarshamn; motive power, water; amount of power, about 100 horsepower; number of maceraters, 2; number of pulp tubs, 2; manufactures wrapping paper, blotting paper, filtering paper and filtering mass, bookbinders' board, etc.; yearly production, about 120 tons; value of yearly production, about 15,000 kronor ($4,020).

*Qvill Pappersbruk.**—Owner, J. Johanson; location, 12 miles from Målilla railroad station; post-office address, Qvill, Öster-Ökna; motive power, water; manufactures yearly about 20 tons of handmade wrapping paper, sheathing paper, blotting paper, bookbinders' board, and press board. The paper is made by hand.

Skärblacka Pappersbruk.—Owner, Skärblacka Aktiebolag; capital stock, 500,000 kronor ($119,000); manager, John Örwall; location, at Skärblacka railroad station, 18 kilometers (11.2 miles) from the city of Norrköping; post-office address, Skärblacka; communications, railroad; motive power, water; amount of power, 1,100 horsepower; number of paper machines, 2; number of pulp boilers, 2; number of maceraters, 12; number of grinding machines, 6; manufactures chiefly paper for paper hangings for export and chemical and mechanical pulp only for own use; yearly production, from 2,000 to 3,000 tons.

*Skärfvete Pappersbruk.**—Owners, J. P. Ek and C. A. Lindqvist; location, in the county of Jönköping; post-office address, Stenberga; number of pulp tubs, 1; number of maceraters, 1; yearly production, about 10 tons of press board and sheathing paper; value of yearly production, about 2,000 kronor ($536). The paper is handmade.

*Stensö Pappersbruk.**—Owner, Axel Sundberg; location, 5 kilometers (3 miles) from Skillingaryd railroad station; post-office address, Skillingaryd. The paper is handmade.

Strömsnäs Bruks Aktiebolag.—Owners, Strömsnäs Bruks Aktiebolag; capital stock, 700,000 kronor ($187,600); managing director, J. Danckwardt; location, at Strömsnäs railroad station, county of

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Kronoberg; post-office address, Malmo; communications, railroad; motive power, water; amount of power, about 2,000 horsepower, whereof there is now used about 500 horsepower; number of paper machines, 2; number of maceraters, 5; manufactures principally wrapping paper; yearly production, about 3,000 tons; value of yearly production, about 900,000 kronor ($241,200).

*Strömsrums Pappersbruk.**—Owners, Isac P. Olson and H. Blomberg; location, 24 kilometers (15 miles) from Målerås railroad station; post-office address, Grönskåra; motive power, water. The paper is handmade.

Ställdalens Pappersbruk.—Owners, Aktiebolaget Stjernfors-Ställdalen; capital stock, 750,000 kronor ($201,000); manager, P. M. Carlberg; location, at Ställdalen railroad station, Örebro County; post-office address, Ställdalen; communications, railroads; motive power, water; amount of power, 250 horsepower; number of paper machines, 1; manufactures sheathing paper and roofing paper, etc., and "Havana" wrapping paper; yearly production, 1,200 tons.

*Sörstafors Pappersbruk.**—Owner, C. Emil Haeger, Lilla Edet; location, at Kolbäcksån, county of Westmanland; post-office address, Kolbäck; communications, steamers and railroad; manager, G. H. Gustafson; motive power, water and steam; amount of power, 400 horsepower; manufactures wrapping paper, draft or copy paper, and printing paper; number of paper machines, 1; number of pasteboard machines, 2; number of grinding machines, 2; number of maceraters, 6; yearly production, 1,060 tons of paper; value of yearly production, 250,000 kronor ($67,000).

*Tararps Pappersbruk.**—Owner, C. P:son Kinberg; location, in the county of Blekinge, southern Sweden; post-office address, Hoby; motive power, water; manufactures wrapping paper, soft gray pasteboard, and filtering paper; yearly production, about 2,000 reams. The paper is made by hand.

Thimsfors Pappersbruk.—Owners, Thimsfors Aktiebolag; manager, A. Muntzing; location, in the county of Kronoberg, at the Lagaå River; post-office address, Markaryd; communications, railroads; motive power, water; amount of power, 500 horsepower used, 1,500 horsepower available; number of paper machines, 2; number of pulp boilers, 1; number of maceraters, 6; manufactures pasteboard for special purposes. The mill was finished last year.

Thorsviks Pappersbruk.—Owner, C. F. Wennberg, Torp, Jönköping; manager, S. M. Blomdal; location, about 10 kilometers from the city of Jönköping; post-office address, Barnarp, Jönköping; communications, steamers and railroad from Jönköping; motive power, water and steam; amount of power, 200 horsepower; number of paper machines, 2; number of pulp boilers, 3 for sulphite and 3 for mechanical pulp; number of maceraters, 6; number of grinding machines, 2; number of refining machines, 2; manufactures wrapping paper and paper for the match factories.

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Trollhättans Pappersbruk.—Owners, Trollhätte Pappersbruks Aktiebolag; capital stock, 125,000 kronor ($33,508); location, 2 kilometers (1.2 miles) from Trollhättan railroad station; post-office address, Trollhättan; communications, railroad in winter, steamers in summer time; foreman and local manager, Karl A. Holst; motive power, water; amount of power, 820 horsepower; number of paper machines, 3; number of pulp boilers, 3; number of maceraters, 12; number of grinding machines, 4; number of refining machines, 2; manufactures "Havana" wrapping paper, three qualities, and white and colored middles; yearly production, 2,000 tons; value of yearly production, 340,000 kronor ($90,320).

*Tumba Pappersbruk.**—Owner, Sveriges Riksbank (the Government Bank); location, at Tumba railroad station; post-office address, Tumba; manager, I. T. Fiebelkorn, engineer; motive power, steam and water; amount of power, 50 horsepower; number of maceraters, 6; manufactures bond paper and bill paper, etc., for the use of the Government Bank; value of yearly production, about 172,000 kronor ($46,096). The paper is partly made by hand.

Wargöns Pappersbruk—Owners, Wargöns Aktiebolag; manager, Capt. Axel Håkanson; location, 4 kilometers (2.5 miles) from the town of Wenersborg and half a kilometer (0.31 mile) from Rånnum railroad station; post-office address, Wargön, Rånnum; communications, own railroad to Rånnum and daily steamers to Gothenburg during summer time; engineer and foreman, Janne Muntzing; motive power, water and steam; amount of power, 2,500 effective horsepower water and 5 steam engines of 245 horsepower; number of paper machines, 3; number of pulp boilers, 2 for soda pulp, 3 for sulphite, 1 straw and 2 rag boilers; number of maceraters, 24, and 3 Marshall maceraters; number of grinding machines, 5 of 200 horsepower each; number of refining machines, 3; manufactures news paper, printing paper, draft or copy paper, paper for paper hangings (wall paper), etc., yearly 2,800 tons soda and sulphite pulp and 4,000 tons mechanical pulp; yearly production, 5,500 tons of paper.

*Wirserums Pappersbruk.**—Owner, C. O. Carlson; tenants, D. G. Lindquist and Ida Larson; post-office address, Wirserum; motive power, water; number of maceraters, 1; number of pulp tubs, 1. The paper is made by hand.

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SWEDISH PASTEBOARD MILLS.

Aktiebolaget Forsså Träpappfabrik.—Owned by a company; capital stock, 302,000 kronor ($80,936); manager, Berthold Rasch; location, in the county of Gefleborg, at Näsviken railroad station, 15 kilometers (9.3 miles) from the city of Hudiksvall; post-office address, Näsviken; communications, the Government railroads; motive power, water and steam; amount of power, 450 horsepower; number of pasteboard machines, 6, whereof 2 are double; number of pulp boilers, 1; number of maceraters, 5; number of grinding machines, 7; number of refining machines, 3; number of drying machines, 3; manufactures white carton (pasteboard for paper boxes) and bookbinders' board, brown and gray bookbinders' board, glued label or tag paper, label pasteboard made of sulphite pulp, leather pasteboard (patented), calendered and uncalendered press board; yearly production, about 2,000 tons; value of yearly production, 300,000 kronor ($80,400); pulp also made for own use.

Alstermo Bruks Aktiebolag.—Owned by a company; managing director, B. W. Lundin; manager of the mill and engineer, A. I. Sundberg; location, 8 kilometers (5 miles) from Målerås railroad station; post-office address, Stockholm; communications, during the shipping season by water from the city of Kalmar and in winter time per railroad from Målerås; motive power, water and steam; amount of power, 380 effective horsepower; number of pasteboard machines for taking up the pulp, 3; number of maceraters, 4; number of grinding machines, 1; manufactures white and brown pasteboard (carton), binders' board, rag felt, cap pasteboard, artificial leather, toe caps and heel stiffenings for shoes, etc.; yearly production, about 800 tons in all; value of yearly production, 180,000 kronor ($48,240).

Brantefors Träpappfabrik.—Owners, Djupafors Fabriks Aktiebolag; managing director and engineer, Baron C. H. Wrede; location, 4 kilometers (2.5 miles) from Djupadal railroad station; post-office address, Djupadal; communications, railroad; motive power, water; amount of power, 220 effective horsepower; number of pasteboard machines for taking up pulp, 4; number of grinding machines, 2. (See further under heading Djupafors.)

Djupafors Träpappfabrik.—Owners, Djupafors Fabriks Aktiebolag; managing director and engineer, Baron C. H. Wrede; location, one-fourth of a kilometer (0.15 mile) from Djupadal railroad station; post-office address, Djupadal; communications, railroad and steamers from Ronneby (9 kilometers—5.6 miles—from Djupadal); motive power, water; amount of power, 275 effective horsepower; number of pasteboard machines for the taking up of pulp, 3; number of maceraters, 1; number of grinding machines, 5; yearly production at Djupafors, Brantefors, and Werperyd together, 1,500 tons; value of yearly production, 180,000 kronor ($48,240).

Inlands Pappfabriks Aktiebolag.—Owners, a company; manager, P. Axel Hellström; location, waterfall at Lilla Edet, 53 kilometers (33 miles) from Gothenburg; post-office address, Lilla Edet; foreman, H. Reich; motive power, water; amount of power, 2,000 horsepower; number of pasteboard machines, 2; number of grinding machines, 6; manufactures "wood" cardboard and carton; yearly production, 4,000 to 5,000 tons.

Kohlsäters Kartongfabrik.—Owners, Kohlsäters Aktiebolag; managing director, J. G. Ullman; location, 30 kilometers (18.6 miles) from Seffle railroad station; post-office address, Gillberga; communications, by water in summer time and by railroad in winter time; motive power, water; amount of power, 300 to 350 effective horsepower; number of pasteboard machines for the taking up of pulp, 3; number of grinding machines, 1; yearly production, 800 to 900 tons of carton.

*Näsfors Aktiebolag.**—Owned by a company; location, at Kil railroad station; post-office address, Kil; communications, railroad; motive power, water; amount of power, 200 horsepower; manufactures white pasteboard (carton); yearly production, about 450 tons.

For further information concerning wood-pulp mills, paper mills, and pasteboard mills in Sweden and Norway, I beg to refer to Svensk och Norsk Papperskalender.

The foregoing figures are based on statements furnished by the manufacturers themselves, and may be considered only approximately correct. Business men must once a year send to the local government—municipal or provincial—a statement as to the number of persons employed by them, their pay, etc., which statements are forwarded to the Central Government. As everybody here pays taxes according to his estimated income, and as the production of a factory, for instance, may be considered as intimately connected with the profit, it is reasonable to believe that the production of the paper mills rather exceeds than falls below the figures given. The same may be said also with reference to the manufactures of paper.

WATER POWER.

Sweden is richer in water courses than any other country in Europe, Finland excepted. The lakes alone cover an area of 8 per cent of the whole territory, and the rivers and creeks are exceedingly numerous, because of the heavy rainfall, the large masses of snow and ice heaped on and among the mountains in the northern part of the country, the absence of large deposits of lime rock which might absorb the water, and the limited evaporation. Being full of rapids and cataracts, often down to the sea, most of the rivers are unfit for navigation. They can be used for rafting purposes, however; and in the future, the power which these waterfalls represent will probably be applied to practical use more than at present.

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According to the official statistics quoted, the water power used for the year 1896 amounted to 140,700 horsepower, of which 17,350 horsepower was used by the paper and pasteboard mills, and 40,720 horsepower by the wood-pulp mills; but these figures probably fall below the actual amount.

I have been unable to ascertain the amount of undeveloped water power, but it must be considerable. The newspapers have stated that the Government alone, in Norrland, or the northern part of the country, owns waterfalls representing 15,000,000 horsepower; in the county of Norrbotten, sixty-three waterfalls are owned wholly and thirteen partly by the Government.

The general tendency in the country is in favor of changing the laws so as to make it easier to utilize available water power.

RAW MATERIALS FOR PAPER MAKING.

The raw materials for pulp and paper making are wood, rags, and straw.

Sweden is rich in forests, which represent one of the most important sources of income to the country. They consist chiefly of spruce and pine, mixed with birch, alder, and aspen. In central and southern Sweden, oaks, elms, maples, linden, and ash trees are also found.

The forests in Sweden cover an area of about 19,000,000 hectares (about 46,951,600 acres). Of this, the Government owns about 7,322,000 hectares (18,093,687 acres). The Government cares well for its forests; but the woods owned by private parties have fared badly in many instances. Lately, much has been done by the Government and by semiofficial societies to prevent too great a reduction of the forests by the distribution of forest seeds and plants to the farmers and by encouraging the planting of trees, etc. Large woods are also owned by sawmill companies, who in their own interest take care that the supply of timber is not exhausted. With proper care, the forests in Sweden will therefore last for many years.

I have not been able to find out the supply of rags. The import slightly exceeds the export.

Straw is much used as fodder for cattle, packing covers for bottles, etc., and I do not think that large quantities can be obtained at reasonable prices for the manufacture of pulp. Some, however, is used for this purpose.

FUELS.

The fuels used consist of coal, wood, charcoal, and peat. The fuel mostly used in the country at large is wood. Charcoal is more or less used in the manufacture of iron. Foundries use coal and coke; other branches of industry also use coal. Coal and coke are used in the households by the urban population. In the northern part of the country wood is cheaper, coal and coke dearer, than in the southern part.

The import of coal and coke during the year 1897 amounted to 29,387,000 hectoliters (about 83,400,300 bushels). The coal mines in Sweden yield only some 225,800 tons yearly. Peat mosses or bogs are numerous; and peat, in the form of balls or cubes, is to some extent used as fuel. It has been tried to convert peat into a species of charcoal; but, so far as I have been able to learn, these experiments have not led to any practical results.

It is hard to make a statement as to the prices of fuel for the production of pulp and paper. This depends much on the location of the various mills; whether the winters are cold or mild; whether or not there is much snow; freight rates for coal, etc. If the winter starts with frost, so that all the morasses, lakes, and creeks get covered with ice, and the snowfall subsequently is sufficient, the lumbermen can bring large quantities of logs to the rafting places. If the winter be mild, very little can be taken out of the woods, especially in the southern and central parts of the country, and the price will increase accordingly. The companies who own forests get their raw material cheaper than those who purchase from the farmers after the trees have been cut down. The present prices at Gothenburg are as follows: Birch wood, 28 kronor ($7.50), and pine or spruce wood, 23 kronor ($6.16), per 135 cubic feet; stove and steam coal, 1.35 to 1.40 kronor (36 to 38 cents); nut coal, 1.30 to 1.35 kronor (35 to 36 cents); anthracite nut, 2.70 to 2.80 kronor (72 to 75 cents); foundry coke, 1.20 to 1.25 kronor (32 to 34 cents); uncrushed English gas coke, 1.05 to 1.10 kronor (28 to 29 cents); etc.—all per hectoliter (2.838 bushels) on railroad cars at Gothenburg.

These prices will, of course, vary more or less, according to the English coal market in general, and discount may be granted for large orders. It is therefore very hard to tell how much the coal will cost the paper mills when they get it. The coal may be ordered directly from England and sent by sailing vessels to a port near to the mill or may have to be sent many miles by rail from the port of entry. The price of wood, the chief raw material for pulp, rules according to locality.

COST OF LABOR.

The wages paid at the paper and wood-pulp mills vary from 75 öre (20 cents) up to 4 kronor ($1.07) per day. The lowest wages—20 cents—are paid to boys. Foremen, engineers, and the like get from 4 to 15 kronor ($1.07 to $4.02) a day. In certain places, the skilled workmen also get free dwelling rooms, the money value of which is difficult to fix.

PAPER MACHINERY.

Paper machinery, printing presses, etc., are as a rule imported from Germany and England.

COMMUNICATIONS.

The communications in the country are good, especially in the southern and central parts; and new railroad lines are now under construction, one north of the Arctic Circle.

The Government owns about 3,270 kilometers (2,032 miles) of railroads; and the one hundred and seven private railroads aggregate in length some 6,220 kilometers (3,865 miles). The public roads, turnpikes, and others amount to about 6,083 Swedish nymil or myriameters (37,798 miles). There are also many rivers which are more or less navigable, and several canals.

The communications with foreign countries are fairly good, but merchandise sent to or from the United States and other distant countries must be transshipped in English or continental ports. At present, there exists no direct steamship line between Sweden and the United States, which renders it next to impossible to ascertain how much is imported from the United States. American goods sent via England, for instance, will appear in the statistics as imported from England; the same applies to goods imported via German ports.

The telegraphic and postal facilities are good, and the telephone system is very much developed in this country. Foreign mails arrive at Gothenburg twice a day.

BANKING FACILITIES.

Besides the savings banks, there are more than fifty banks in the country, twenty-seven of which correspond to our national banks; to these should be added the Government Bank, which is under the direct supervision of the Riksdag, or Congress, and has branch offices in different parts of the country. The larger banks have regular business connections with banks in foreign countries.

FREIGHT RATES.

The steamship lines, foreign or domestic shipping, have no fixed tariffs. The freight rates depend on the demand for tonnage at the time, amount of goods to be sent, whether the shipments are to be made regularly or not, etc. By contract, low rates may be obtained for regular, large shipments. The rates to and from Gothenburg may be considered to average as follows: From New York or Boston, 17s. 6d. to £1 ($4.26 to $4.86) per ton; from Hamburg or Lübeck, 12 to 15 kronor ($3.22 to $4.02) per 1,000 kilograms (2,204.6 pounds); from Antwerp, 20 francs ($3.86) per 1,000 kilograms; from Westphalia, Germany, 27 to 30 marks ($6.43 to $7.14) per 1,000 kilograms; to New York or Boston, 16s. to 17s. 6d. ($3.89 to $4.26) per ton.

The freight rates on the railroads in Sweden depend on the amount to be sent, the class of goods, and the distance. For quantities of writing paper, for instance, not exceeding 2,500 kilograms in weight there must be paid:

Distance.	Per each 100 kilograms.	
Kilometers.	*Öre.*	*Cents.*
10	17	4.5
20	30	8
30	42	11.3
40	55	14.7
50	67	18
100	119	31.9

It will be noticed that it is relatively cheaper to send goods a long distance than a short one. For quantities 2,500 to 5,000 kilograms (5,512 to 11,023 pounds), 5,000 to 8,000 kilograms (17,637 pounds), and exceeding 8,000 kilograms, there are other tariffs or rates. The rates are also different for the different classes of paper goods.

PRICES.

The merchants are unwilling to state what they pay for the paper imported, and give their own wholesale prices only to actual or prospective purchasers. The market prices are about as follows:

		Cents.
Packing or wrapping paper	per 2.2046 pounds	5 to 27
Writing paper	do	11 to 27
Printing paper	do	7 to 16

IMPORTS AND EXPORTS.

The classes of paper, quantities, origin, and destination will be shown in the following tables, so far as specified in the statistics. I understand that considerable quantities of printing paper are imported from Norway; writing paper, blotting paper, tissue paper, and copying paper are imported from Germany and England.

The paper exported are chiefly printing, wrapping, and other coarse paper.

The foreign trade in paper, pasteboard, and manufactures of paper shows the following figures:

Years.	Imports.	Exports.
1871-1875	$509,200	$660,400
1876-1880	626,600	1,447,500
1881-1885	916,800	2,488,400
1886-1890	1,213,000	4,463,800
1891	1,648,200	6,902,900
1892	1,733,700	8,151,800
1893	1,192,000	7,748,100
1894	964,400	2,052,000
1895	1,027,100	2,089,500
1896	1,047,700	2,229,800
1897	1,274,500	2,562,000

These figures can not, however, be considered quite correct. With the year 1893, a new system of valuation was adopted for the statistics covering import and export from and to Norway, and in 1894 this new system was adopted in all the statistics of trade. It was believed that the values previously calculated were too high. Thus, the decrease in business which the foregoing figures seem to indicate as beginning with the years 1893 and 1894 did not actually take place. It will be noticed that after the year 1894 the sums increase again. If the same prices had been calculated for the year 1894 as for 1893, the figures for the first year mentioned would have been as follows: Imports, $1,174,100; exports, $8,910,200; which shows that the export of paper really increased.

Imports and exports, 1893–1897.

Articles.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
1893.				
Paper:				
Sandpaper and emery paper……pounds	166,207	$12,123	44	$3
Wrapping paper, etc……do	45,503	2,766	5,210,184	316,685
Gilt, silvered, etc……do	352,493	149,977	198	84
Other kinds, also ruled……do	6,413,166	674,015	35,658,964	6,502,270
Pasteboard:				
Sheathing paper and roofing felt……do	1,280,207	46,688	75,809	2,765
Other kinds……do	206,106	20,044	5,890,867	572,894
Manufactures of paper, pasteboard, etc., not specified:				
Not japanned……pounds	181,873	66,328	42,033	15,329
Japanned, bronzed, etc……do	30,879	18,769	1,473	895
Paper hangings and borders……do	177,219	86,174	638,613	310,529
Albums or parts thereof……do	38,530	23,419	836	508
Book covers, loose, etc……do	7,035	2,566	2,934	1,070
Envelopes and paper bags……do	192,984	35,190	125,748	22,930
Blank books……do	67,974	16,526	……	……
Masks……number	1,337	179	70	9
Playing cards……packs	165	22	7,452	997
Business cards, etc……pounds	61,142	37,164	1,847	1,123
Total	……	1,191,950	……	7,748,091

Imports and exports, 1893-1897—Continued.

Articles.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
1894.				
Paper:				
Sandpaper and emery paper......pounds...	190,003	13,859	7,871	574
Wrapping paper, etc......do......	55,966	1,701	14,920,519	453,450
Gilt, silvered, and glazed paper......do......	377,976	160,819	....	....
Other kinds......do......	6,050,619	450,075	38,070,550	1,157,002
Pasteboard:				
Sheathing and roofing felt, press board...do......	1,734,269	66,894	42,530	1,551
Other kinds......do......	101,074	9,830	6,799,094	148,774
Manufactures of paper, pasteboard, etc., not otherwise mentioned:				
Not japanned......pounds...	179,481	65,455	42,811	15,613
Japanned, bronzed, etc......do......	31,133	18,923	2,831	1,721
Paper hangings and borders......do......	201,421	67,325	705,904	235,984
Albums or parts thereof......do......	21,034	12,785	14,206	8,638
Book covers, loose......do......	8,528	3,110	1,993	727
Envelopes and paper bags......do......	189,027	34,468	139,040	25,353
Blank books......do......	68,528	16,661	....	....
Masks ......number...	1,088	146	....	....
Playing cards......packs...	496	66	5,040	675
Busihess cards, etc......pounds...	69,551	42,274	3,152	1,916
Total	....	964,391	....	2,051,978
1895.				
Paper:				
Sandpaper and emery paper......pounds...	214,812	15,668	1,237	90
Wrapping paper, etc......do	76,744	2,332	14,450,621	439,169
Gilt, silvered, or glazed paper, etc......do......	434,491	184,865	....	....
Other kinds......do......	6,265,405	450,175	40,450,105	1,229,319
Pasteboard:				
Sheathing and roofing paper and press board, pounds	2,289,958	83,513	83,508	3,046
Other kinds......pounds...	239,759	23,317	6,964,346	152,172
Manufactures of paper, pasteboard, etc., not specified:				
Not japanned......pounds...	167,563	61,110	43,454	15,848
Japanned, bronzed, etc......do......	33,968	20,647	1,096	666
Paper hangings and borders......do......	227,901	76,187	564,146	188,594
Albums or parts thereof......do......	14,596	8,875	16,865	10,251
Book covers, loose, etc......do......	9,292	3,389	3,512	917
Envelopes, etc......do......	180,546	32,922	248,299	45,276
Blank books......do......	60,049	14,600	....	....
Masks ......number...	2,178	292	....	....
Playing cards......packs...	946	127	4,356	584
Business cards, etc......pounds...	80,743	49,080	5,948	3,615
Total	....	1,027,099	....	2,089,547
1896.				
Paper:				
Sandpaper and emery paper......pounds...	220,186	16,060	547	40
Wrapping paper, etc......do... ..	285,974	6,953	15,516,072	377,239
Gilt, silvered, and glazed paper......do......	461,112	200,446	....	....
Other kinds......do......	8,013,255	409,811	46,929,225	1,426,226
Pasteboard:				
Press-board, sheathing and roofing paper or felt......pounds...	3,180,682	115,997	271,765	9,911
Other kinds......do......	280,143	27,244	9,793,660	214,300

Imports and exports, 1893–1897—Continued.

Articles.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
1896—Continued.				
Manufactures of paper, pasteboard, etc., not specified:				
Not japanned ... pounds	193,370	70,520	48,913	17,838
Japanned, bronzed, etc ... do	32,169	19,553	3,776	2,296
Paper hangings and borders * ... do	325,590	73,111	820,670	99,764
Albums or parts thereof ... do	9,956	6,051	31,755	19,301
Book covers, loose, etc ... do	10,851	3,960	3,937	1,436
Envelopes and paper bags ... do	195,204	35,595	318,397	58,059
Blank books ... do	55,552	13,506	...	...
Masks ... number	1,907	256	...	...
Playing cards ... packs	2,859	383	3,744	502
Business cards, etc ... pounds	79,355	48,233	4,658	2,831
Total ...	...	1,047,679	...	2,229,743
1897.				
Paper:				
Sandpaper and emery paper ... pounds	219,926	16,041	5,075	370
Wrapping paper, etc ... do	37,886	921	911,080	22,151
Gilt, silvered, and glazed paper ... do	669,361	284,795	...	...
Other kinds † ... do	7,476,677	435,184	62,371,930	1,895,546
Pasteboard:				
Press board, sheathing, and roofing paper or felt ... pounds	4,983,910	181,759	422,844	15,421
Other kinds ... do	320,489	31,168	16,046,153	351,114
Manufactures of paper, pasteboard, etc., not specified:				
Not japanned ... pounds	242,905	88,586	134,174	48,932
Japanned, etc ... do	32,637	19,674	2,061	1,253
Paper hangings and borders ‡ ... do	452,823	97,080	1,019,912	123,985
Albums or parts thereof ... do	17,130	10,412	87,668	53,286
Book covers, loose ... do	12,185	4,444	2,379	867
Envelopes and paper bags ... do	193,456	35,276	258,882	47,206
Blank books ... do	58,697	14,272	...	...
Masks ... number	1,094	147	...	...
Playing cards ... packs	7,245	971	1,548	207
Business cards, etc ... pounds	88,418	53,742	2,809	1,707
Total ...	...	1,274,472	...	2,562,045

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* Whereof a certain quantity is imported from Norway, valued at only 12.2 cents per pound; the other valued at 23.5 cents per pound.

† Including a certain quantity imported from Norway, valued at only 2.7 cents per pound; the other valued at 9.1 cents per pound.

‡ Including a certain quantity imported from Norway, valued at 12.2 cents per pound; the remainder valued at 31.3 cents per pound.

Origin of imported paper and destination of exported paper.

Articles and countries.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
Paper:				
Sandpaper and emery paper—	*Pounds.*		*Pounds.*	
Norway	18	$1	....	....
Finland	....	....	2,072	$151
Denmark	5,560	406	386	28
Netherlands	....	....	2,617	191
Germany	205,807	15,011	....	....
Belgium	1,323	97	....	....
Great Britain	3,265	238	....	....
France	3,953	288	....	....
Total	219,926	16,041	5,075	370
Wrapping paper, etc.—				
Norway	1,453	35	425,626	10,348
Finland	....	....	1,065	26
Russia	....	....	635	16
Denmark	2,934	71	52,228	1,270
Germany	19,006	462	13,896	338
Netherlands	2,377	58	....	....
Great Britain	10,937	266	410,010	9,968
Belgium	1,179	29	....	....
France	....	....	7,620	185
Total	37,886	921	911,080	22,151
Gilt, silvered, and other surface-coated paper—				
Norway	170	72	....	....
Finland	29	12	....	....
Denmark	66,670	28,366	....	....
Germany	416,015	177,003	....	....
Netherlands	36,831	15,670	....	....
Belgium	14,240	6,061	....	....
Great Britain	134,217	57,105	....	....
France	1,189	506	....	....
Total	669,361	284,795	....	....
Other kinds, including writing and printing paper, etc.—				
Norway	3,825,717	102,315	581,730	17,679
Finland	29,146	2,657	10,366	315
Denmark	393,310	35,859	1,117,446	33,960
Germany	1,747,432	159,319	6,010,210	182,657
Netherlands	501,412	45,715	1,068,850	32,483
Belgium	597,528	54,479	1,687,939	51,298
Great Britain	348,975	31,817	51,792,432	1,574,024
France	33,157	3,023	102,338	3,110
Total	7,476,677	435,184	62,371,930	1,895,545
Pasteboard:				
Pressing board, sheathing and roofing paper or felt—				
Norway	770,709	28,107	322,730	11,769
Finland	1,097,122	40,011	5,083	186
Denmark	86,705	3,162	35,506	1,295
Germany	2,419,363	88,232	59,525	2,171
Belgium	288	11	....	....
Great Britain	609,723	22,236	....	....
Total	4,983,910	181,759	422,844	15,420

Origin of imported paper and destination of exported paper—Continued.

Articles and countries.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
Pasteboard—Continued.				
Other kinds of pasteboard—	*Pounds.*		*Pounds.*	
Norway	67,329	$6,548	284,601	$6,228
Finland			9,182	200
Denmark	21,739	2,114	212,958	4,660
Germany	49,319	4,797	1,551,824	33,956
Netherlands	105,038	10,215	28,771	630
Belgium			813,428	17,799
Great Britain	77,048	7,493	13,145,389	287,641
France	16	1		
Total	320,489	31,168	16,046,153	351,114
Manufactures of paper, pasteboard, and pulp, not specified:				
Not japanned—				
Norway	15,401	5,618	34,718	12,661
Finland	75	27	36,773	13,411
Russia	82	30	42,703	15,573
Denmark	35,486	12,941	6,504	2,372
Germany	180,297	65,754	12,181	4,442
Netherlands	165	60		
Belgium	7,622	2,779		
Great Britain	3,422	1,248	1,276	466
France	343	125	19	7
Spain	12	4		
Total	242,905	88,586	134,174	48,932
Japanned, bronzed, etc.—				
Norway	220	134	165	100
Finland	18	11	1,852	1,126
Russia	117	71		
Denmark	7,509	4,564		
Germany	22,030	13,391	44	27
Belgium	456	277		
Great Britain	1,175	714		
France	842	512		
Total	32,367	19,674	2,061	1,253
Paper hangings and borders:				
Norway	255,242	31,028	164,200	19,961
Finland			34,059	4,140
Denmark	8,338	2,787	127,892	15,547
Germany	107,986	36,100	130,314	15,841
Netherlands	9,424	3,151	299,270	36,381
Belgium	115	38	175,056	21,283
Great Britain	69,079	23,093	89,101	10,832
France	2,639	883		
Total	452,823	97,080	1,019,912	123,985
Albums or parts thereof:				
Norway	9,426	5,730	71,960	43,739
Finland	16	9	15,699	9,542
Russia	7	4		
Denmark	974	592		
Germany	6,400	3,891	9	5
Belgium	7	4		
Great Britain	271	165		
United States	29	17		
Total	17,130	10,412	87,668	53,286

Origin of imported paper and destination of exported paper—Continued.

Articles and countries.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
Book covers, loose:	*Pounds.*		*Pounds.*	
Norway	359	$131	2,139	$780
Finland	11	4	181	66
Denmark	4,978	1,815		
Germany	6,091	2,221	26	10
Belgium	139	51		
Great Britain	567	207	33	11
France	40	15		
Total	12,185	4,444	2,379	867
Envelopes and paper bags:				
Norway	303	55	258,677	47,169
Finland	369	67	110	20
Denmark	20,596	3,755		
Germany	113,776	20,746	95	17
Netherlands	38,541	7,028		
Belgium	13,858	2,528		
Great Britain	5,858	1,068		
France	155	29		
Total	193,456	35,276	258,882	47,206
Blank books:				
Norway	685	167		
Finland	32	8		
Denmark	6,209	1,511		
Germany	49,098	11,935		
Belgium	9	2		
Great Britain	2,552	622		
France	112	27		
Total	58,697	14,272		
Masks:	*Number.*		*Number.*	
Norway	9	1		
Denmark	487	65		
Germany	598	81		
Total	1,094	147		
Playing cards:	*Packs.*		*Packs.*	
Norway	214	29	1,548	207
Denmark	2,383	319		
Germany	4,500	603		
Great Britain	148	20		
Total	7,245	971	1,548	207
Visiting cards, etc.:	*Pounds.*		*Pounds.*	
Norway	3,153	1,916	2,716	1,651
Finland			93	56
Russia	398	241		
Denmark	24,046	14,615		
Germany	58,112	35,324		
Netherlands	16	9		
Belgium	2,520	1,532		
Great Britain	84	51		
France	89	54		
Total	88,418	53,742	2,809	1,707

Articles not included in the foregoing tables.

Articles.	1897.	
	Imports.	Exports.
Printed matter, not specified	$66,683	$55,192
Books:		
Printed in Swedish	34,339	125,625
Printed in foreign languages; also books for the blind	166,704	
Maps, all kinds	507	970
Lithographic and photographic articles, illustrations for books, etc	215,472	57,975
Music sheets	34,155	1,019
Paintings and drawings	41,101	70,061
Total	558,961	310,842

Imports and exports of rags in 1897.

Description.	Quantity.	Value.
	Pounds.	
Imports	2,774,866	$13,493
Exports	2,163,720	10,521

Rags were imported from England, Germany, Denmark, Norway, and Belgium and exported to Germany, Denmark, England, the United States, Finland, and Norway. The importance of quantities was in the order the countries are named.

EXPORT DUTY.

There is no export duty. The town dues for paper, pasteboard, etc., exported at Gothenburg are as follows, per 220.46 pounds:

Articles.	Dues.	
	Öre.	*Cents.*
Paper, all kinds	7	1.87
Pasteboard, all kinds	3	0.8
Pulp:		
Dry chemical	3	0.8
Moist chemical	2	0.53
Dry mechanical	2	0.53
Moist mechanical	1.5	0.39

If the goods are exported from wharf owned by private person, but within the city limits, the town dues amount to half of the above.

IMPORT DUTY.

The import duty on paper, etc., is as follows, per kilogram (2.2046 pounds):

Articles.	Duty.	
	Kronor.	*Cents.*
Pasteboard:		
Pressing board, sheathing, and roofing paper or felt	0.01	0.268
Other kinds	.05	1.34
Paper:		
Sandpaper and emery paper	Free.	....
Packing paper, wrapping paper, and other coarse paper not suited for writing, drawing, or printing purposes	.02	0.53
Gilt, silvered, or coated with other metals, or with colored surface coating, including white glazed paper, and paper pasted on cotton or linen cloth	.20	5.36
Other kinds, ruled paper included	.10	2.68
Paper hangings and borders	.25	6.7
Envelopes and paper bags	.30	8.04
Manufactures of paper, pasteboard, and pulp, not specified:		
Not japanned	.50	13.4
Japanned, bronzed, gilt, or silvered	2.00	53.6
Pulp	Free.	....

Pasteboard or cardboard composed of two or several sheets of paper pasted together (lamellar) must pay duty as paper.

Bouquet paper made partly of cloth or trimmed with lace, ribbons, etc., is classified with manufactured goods not specially provided for (15 per cent ad valorem).

No deduction in weight is allowed for the immediate covering of the goods in question.

The town dues for paper, etc., imported at Gothenburg amount to 1 per cent of the import duty on the goods.

GENERAL REMARKS.

I do not think that the American manufacturers will be able to sell wood pulp or coarse kinds of paper to Sweden, unless the prices are very low. From the foregoing tables, it has been learned that these articles are produced in comparatively large quantities in this country. The processes and methods of manufacture are also improving. It is reported that a large wood-pulp mill is now being built, where the pulp will be bleached by electricity, and that a paper mill is under construction at Donnarfoet, which will be the largest in Europe and able to produce 30,000 tons of printing paper and wall paper per year. Better classes of writing paper, envelopes, congratulation cards, and Christmas and New Year's cards of American manufacture may be sold here, if the prices do not exceed those demanded by German or English exporters for articles of same quality. I am told that the Atlantic liners carry goods at such low rates that the transportation charges from Boston or New York would be no obstacle, and that the freight rates on goods from Germany are about as high or higher than from the United States.

The German and English exporters of paper send their representatives to Sweden, but this course would probably be too expensive for Americans; it might be better to appoint agents here and provide them with samples, etc. By one or several sample shipments, the costs of transportation, duty, and other charges, sizes, qualities, weight, etc., could be ascertained more easily than in any other way. The letter and note paper used here is of about the same size as in the United States; the cap paper is generally somewhat larger; the envelopes mostly employed are of a square form. Large, long, and narrow envelopes are very little used, and only one dealer in Gothenburg has them for sale.

Swedish and English vessels control the water carrying trade.

The most prominent stationers here in Gothenburg are N. J. Gumperts Pappershandel, Göteborgs Lithografiska Aktiebolag, Nordmark & Co., and Meyer & Köster.

ROBERT S. S. BERGH,
Consul.

GOTHENBURG, *March 16, 1899.*

STOCKHOLM.

PAPER MANUFACTURE.

Paper manufacture during the last few years has had in Sweden an extensive development, which is in a great measure due to the great wood-pulp industry. The kinds of paper most commonly produced are correspondence, writing, printing, and wall paper and cardboard. The kind mostly exported is printing paper, especially that for newspapers, which is generally manufactured of ground wood pulp; also of chemical wood pulp or rags.

Wrapping paper and wall paper, made either of unbleached chemical wood pulp, or of semichemical pulp (from boiled wood), or of mixed chemical and ground pulp, are also exported. Bank-note and stamped paper is manufactured at the Government paper mill, Tumba, situated a few miles from Stockholm. There is also manufactured a filter paper well known abroad, even in the United States; it is made at Grychsbo, in Dalarne, where there is found water of the purity desirable in its manufacture. Of great importance is the manufacture of cardboard, as well for the lining of walls as for roofs. That used for the latter purpose is saturated with bitumen, which is afterwards hardened by the action of the air; and thus the paper is rendered both fire and water proof. These kinds are manufactured at Munksjö and at Fiskeby.

Among objects manufactured of paper and cardboard are especially to be noted labels, envelopes, paper bags, and boxes—all of which are manufactured on a large scale at Norrköping, and are also exported. Playing cards are also manufactured in Sweden, being made under State control, so that every package must be stamped before sale. I consider the exports of such cards to be 10,000 packs a year.

Another article which is used for building purposes (manufactured from wood and wood pulp pressed together), which is gaining a good market, is the compo board.

PULP MANUFACTURE.

Wood pulp is one of Sweden's most prominent articles of export, and the production of this raw material for paper may be called one of the natural industries of the country, thanks to the rich supply of timber suitable for the purpose and of motive power from the numerous waterfalls. So far as concerns the technical development of this industry, Sweden has from the very beginning taken a leading position, especially regarding the invention and introduction of improved methods. The first wood-pulp factory was founded at Trollhättan in 1857. In this establishment, the "Völter's" system was used, according to which the pulp is produced by the grinding of unboiled blocks of wood against a sandstone revolving on a horizontal axle, the blocks being saturated with water during the grinding. More recently established manufactories for the production of wood pulp from raw blocks have the grindstones lying horizontally as a rule, while hydraulic pressure is used for bringing the wood into contact with the stone. Another method which was afterwards introduced into several works consists in boiling the wood in water before grinding. By the use of this so-called half-chemical wood pulp, the paper no doubt becomes stronger, but is darker in color, as the pulp after being boiled is difficult to bleach.

In late years there has been introduced the manufacture of chemical wood pulp, or, as it is commonly called, cellulose, partly by the use of caustic soda, partly by sulphite of lime according to Mitscherlich's method, and partly by sulphite of magnesia, the last being a method of a Swedish engineer, C. D. Ekman. Still another method has been lately tried, namely, the use of a lye which consists principally of sulphate of soda, which method is cheaper than any of those mentioned

The Swedish wood-pulp factories increased rapidly until 1870, after which there came a period of stagnation which lasted till 1880, when their number again rapidly rose. In 1875, there were in Sweden 18 wood-pulp manufactories, with a product worth $300,000; in

1885, the factories had increased in number to 38, with a product worth $917,000; while in 1890 there were 117 such factories. The largest paper mill in Europe is now being erected at Donnarfoet by the Stora Kopparbergs BergslagsAktiebolag. The output is estimated to be 30,000 tons a year.

In Sweden, chiefly spruce, but also fir and aspen, is used in the manufacture of wood pulp. Scandinavian wood pulp has a decided advantage over, for example, the German, since pine is being used in Germany. Especially in the quality of chemical wood pulp, Sweden takes first place.

Sweden's chief customers for wood pulp are England, Germany, the United States, Finland, and Norway. This export has been growing steadily, as the following figures show:

	Pounds.
1872	12,758,000
1882	20,394,000
1886	55,000,000
1891	190,000,000
1897	330,000,000

The price has during this time fallen more than 50 per cent.

The export of rags is comparatively insignificant, amounting in 1897 to about $25,000, while the import in the same year was about three times as much.

The machinery used in the production of paper and pulp forms one of the specialties of several establishments, as Mygvist & Holm, Trollhättan; Forsvik and Hellefors Works.

MISCELLANEOUS STATISTICS.

The number of periodicals, newspapers, and magazines published is at present about 650, and 70,000,000 newspapers are yearly transmitted by post. This figure is, however, far from representing the entire number in circulation, since it is only in exceptional cases that the post-office undertakes the distribution of a paper in the place where the same is issued.

The following firms are the largest paper dealers in this district:

Grubbens & Co., Stockholm.
J. Blomberg & Co., Stockholm.
B. O. Geijer, Stockholm.
Svanström & Co., Stockholm.
I. M. Göthe, Stockholm.
Victor Petterson, Stockholm.

The above information is gathered from reliable sources.

The progress of industry in Sweden has been greatly hampered by her small supply of coal and the necessity of purchasing the "daily bread of industry" from foreign countries. As, however, the use of electricity becomes more general, the prospects are favorable for industrial pursuits, since in her innumerable waterfalls Sweden has an extremely rich supply of cheap motive power.

The number of workingmen employed in the paper and pulp manufactories is estimated at about 6,000.

EDWARD D. WINSLOW,
Consul-General.

STOCKHOLM, *January 20, 1899.*

NORWAY.

CHRISTIANIA.

POPULATION.

The population of Norway, according to the census of 1897, was 1,988,674; it is now estimated at 2,000,000. The population of Christiania, the capital city, is about 207,000. The percentage of illiterates is small, education being compulsory. It does not exceed 3 per cent of the whole population, including the Lapps and Finns in the north.

CONSUMPTION.

Paper is used for all ordinary purposes, but it is not employed to any notable extent in manufactures. There are no industries peculiar to the country requiring paper. It is used for printing purposes, in banks, offices, and institutions of learning, and is often inferior to what is used in the United States for similar purposes. Wrapping paper, pasteboard, ceiling and wall paper are used the same as in the United States.

The terms of sale differ according to bargain and vary all the way from two to six months. Accepted drafts are very seldom employed—never unless the purchaser's responsibility is doubtful. Considering the small population, large quantities of paper are used; but it is impossible to get precise figures as to consumption. Statistics are far more difficult to obtain here than in the United States.

The total number of paper firms, companies, or brokers in paper in this consular district is between 90 and 95. As principal dealers in Christiania, I will mention:

Alvoens Papirlager, Dronningens Gade 26.
Rich. Andvord, Tornet 3.*
Det Norske Aktiefarlag, Rosenkrans Gade 3.
John Frederiksen, Akersgaden 47.
E. C. Gjestvang, Prinsens Gade 22.*
O. A. Hall, Shippergaden 26.
Halvorsen & Larsen, Shippergaden 40.*
Jens Lyche, Munhedv. 39.
Mittet & Roloff, Ovre Slatsgade 9.
Johs Monsen, Kongens Gade 9.
G. A. Norberg, Ahersgaden 11.
Thv. Nordly & Co., Raadhusgaden 13.
Carl E. Peterson & Son, Kongens Gade 24.*
Nils Schanche, Raadhusgaden 14.
Wetlesen, Larsen & Co., Munhedv. 45.
T. Plesner, Karl Johans Gade 27.

*Large dealers.

The two last-mentioned firms deal in building paper exclusively. All of the above are wholesale dealers.

The number of publications in my district is 147, of which 16 are issued daily or twice a day. There are some 11 magazines, mostly small affairs. The number of printers can not be ascertained. There are 63 publishers. Quite a large number of books is published every year. A factory was started some three years ago for the manufacture of pails and tubs from pulp. It did not pay, and was soon closed. Christiania has 2 small factories making playing cards, 1 making picture frames, 2 or 3 making ceiling and wall ornaments, and 5 concerns making fancy paper boxes and other small articles from paper.

The consumption of paper will certainly increase as the many uses to which it may be put become more generally known.

Large quantities of wrapping and printing papers, also considerable quantities of writing papers—the latter generally of inferior quality—are manufactured in Norway. The importations of such papers are therefore not very large. Of drawing, tracing, blotting, and fine writing papers, the importations are considerable, the trade being dominated by Germany and Belgium.

PRODUCTION.

Of late years, the industries of the country have been developed in a very marked degree, and the production of paper has increased. There is every reason to believe that the paper industry will become of more importance every year.

There is still considerable undeveloped water power to be found in different tracts of Norway. No statistics as to volume are obtainable. Of late years, nearly all the power so located as to appear valuable has been bought by foreign or native capital, often for speculation only. Some of this power might be utilized in the production of pulp and paper, being located near streams and forests. But Norway, owing to the mountainous and generally broken condition of the country, is but sparsely supplied with railroads. Transportation of both the raw material and of the manufactured article is therefore often difficult. Where more favorable conditions exist, the power is utilized, in part at least. In Masjöen, Vefsen, and probably in one or two other places, I believe power and timbered tracts suitable for the industry could yet be had at reasonable figures.

Of the developed water power, I can learn no more than of the undeveloped. The best localities in this district are Sarpsborg, Drammen, Shien, Parsgrund, Honifas, and Christiansand.

Fuel is abundant and quite cheap. The native product is wood, peat, and coke from the gas works. At Andoen, northern Norway, are coal mines from which much has been expected, but so far I can learn of no output. Coal is imported from England and Scotland. Prices in the English markets are at the present time quoted as follows:

	s.	d.	
Best Newcastle, f. o. b. Blyth:			
Steam	11	6	=$2.80
Smalls	5	0	= 1.22
Best Hamilton, f. o. b. Grangemouth	11	0	= 2.68
Freight steamers—Blyth–Christiania	5	3	= 1.28

Inland railroad rates for coal in carload lots are about 0.037 kroner (0.99 cent) per ton per kilometer.

Petroleum in lots of 10 barrels or more is quoted in this market as follows, per 100 kilograms, including barrels, and with 2½ per cent discount for cash:

Description.	Price.	
American:	*Kroner.*	
150° water white	16.50	$4.42
120° standard	14.00	3.75
Russian 120° standard	13.50	3.62

Inland railroad rates for petroleum are about 0.063 kroner (1.7 cents) per ton per kilometer (0.62 mile).

Prices of wood depend on location.

Of raw material for paper making, Norway has trees, vegetable fibers, rags, and refuse. The trees consist principally of pine, fir, elm, ash, and birch. The surface of Norway is 125,593 square miles in extent. Of this, 76 per cent consists of unproductive mountains, rocks, marshes, and lakes; 21 per cent is in timbered tracts; and only 3 per cent in field, meadow, and town sites. Parts of the mountains are used as pastures. The yearly cut of timber is calculated to be 9,740,460 cubic meters (343,999,930 cubic feet), or 143 cubic meters (5,050 cubic feet) per square kilometer (0.386 square mile) of timber. It is estimated that at least one-fifth is exported in some form or another. In the southern tracts, the annual growth of timber is 152 cubic meters (5,368 cubic feet) per square kilometer of timber, while in the northern tracts there is on an average only 80 cubic meters (2,825 cubic feet) per square kilometer of timber, which in all probability is too high an estimate in general. Available timber is growing less every year. The increase in the export of lumber has of late years been as follows:

Year.	Quantity.	
	Cu. meters.	*Cubic feet.*
1894	1,716,311	60,614,269
1895	1,674,574	59,140,260
1896	1,846,098	65,197,905
1897	2,095,111	73,992,197
1898	1,973,822	69,708,682

It is true that laws regulating the cut of timber are old in Norway, and that trees are planted every year, both by the State and by private parties; but I believe that the annual cut is far larger than the growth. At Jaderen, near Stavanger, on fine, level ground, a large tract has been planted in trees by the State.

Vegetable fibers, such as shrubs, mosses, etc., are abundant, but are seldom, if ever, utilized. Some of the fine mosses appear suitable for paper making. Rags and old rope are used to some extent in paper factories, but both are articles of export. The cost of the raw material depends, naturally, on the location of the plant. Some mills are located on streams on which the logs are floated down; others near the seashore or railroads. Logs for sawmills on streams are offered at the following prices, per dozen:

Size.*	Price.	
	Kroner.	
24⅗ feet long, 9¼ inches top diameter	32	$8.58
24⅗ feet long, 8¼ inches top diameter	20	5.36
For pulp and paper mills on streams:		
24⅗ feet long, 7½ inches top diameter	13	3.48
24⅗ feet long, 7¾ inches top diameter	16	4.29

* English measurement.

Sulphur is imported principally from Great Britain, Italy, and Spain. Lime is produced in Norway and is an article of export.

Wages for lumbermen are from 2.25 to 3 kroner (60 to 80 cents) per day; for man with horse and sleigh, 4 to 5 kroner ($1.07 to $1.34) per day.

Wood-pulp machinery of a good quality is made in Norway. The paper machinery made here is inferior, and machinery is therefore generally imported from Germany, England, and America.

The cost of labor in paper mills may be stated as follows:

Description.	Wages per day.	
	Kroner.	
Expert labor	5.00 to 8.00	$1.34 to $2.14
Laborers	2.00 to 3.00	.54 to .80
Women	1.25 to 1.50	.34 to .40

The efficiency of the laborers is not up to the American standard. Strikes are quite common, cost of living is high (even in the rural districts), and wages are on the increase.

The number of paper mills (in some instances combined with pulp mills) in my district is 11, and the capital invested in them 6,500,000 kroner ($1,742,000). Their capacity I can not ascertain, but the output of paper of all kinds from the paper mills in Norway, for the year 1898, is stated by the Norwegian Paper Manufacturers' Association, at a recent meeting, at no less than 9,000,000 kroner ($2,412,000). Norway's export of paper during recent years has been as follows:

Year.	Value.	
	Kroner.	
1895	5,962,000	$1,579,816
1896	7,200,000	1,929,600
1897	7,699,000	2,063,332
1898	9,000,000	2,412,000

For the last year (1898) the above figures do not come from the regular official sources. Further on in the report I give additional details. Norway's export of wood pulp and cellulose for the years stated has been as follows:

Year.	Quantity.	Value.	
	Tons.	*Kroner.*	
1875	8,540	683,000	$183,044
1885	90,781	5,664,000	1,517,952
1893	219,007	14,574,000	3,905,832
1894	238,860	14,177,000	3,799,436
1895	246,225	13,468,000	3,609,424
1896	284,191	15,381,000	4,122,108
1897	302,359	18,041,000	4,834,988

It will be seen that the industry is fast increasing. Figures for 1898 can not be had as yet without outlay. The Norwegian Pulp Association has of late become frightened on account of American competition in the European markets. Last year, it wanted information and a commission was sent to the United States to study the conditions. The report did not reassure the interested parties. In a recent newspaper article, however, it is stated that the Norwegian pulp manufacturers need not fear American competition in European markets, on account of the advantages they have in distances and ocean freights.

This year, there has been scarcity of water in some of the Norwegian rivers. In the Drammen River district there are some 16 mechanical wood-pulp mills, with an annual production of about

150,000 tons of moist pulp. Most of these mills had last year (1898) a smaller production than in 1897, owing to lack of water. This year, so far, has been much worse, the water being lower than for the last ten years, and most of the mills have shut down for the time. One of the best pulp and paper mills in the country is the Bohnsdalens Wood Pulp and Paper Mills, located near Eidsvold, some 68 kilometers (42 miles) from Christiania. In their invoices the managers place transportation charges and other outlay for a shipment of 50 tons of dry sulphate pulp to New York as follows:

Description.	Charges.	
	Kroner.	
Transportation from mills to Christiania, 50 tons, at 3.60 kroner	180.00	$48.24
Cartage and shipping expenses at 1.20 kroner	60.00	16.08
Export dues (port dues, etc.) at 0.45 krone	22.50	6.03
Consular certificate	9.50	2.55
Insurance on 12,500 kroner at 0.4 per cent	50.00	13.40
Packing charges at 4.95 kroner	247.50	66.33
Ocean freight at 14.40 kroner	720.00	192.96
Total	1,289.50	345.59

Freight charges are not alike on all lines, and are difficult to give per kilometer. Some of the mills are run by electric power, like the one at Sarpsborg, on the west side of the falls. This mill is owned by a company composed of Englishmen, Germans, and Norwegians. The firm is styled the Kellner Partington Paper and Pulp Company, Limited, and it also owns like mills at Barrow-in-Furness, in England, and in Hallein, Austria. At this plant some 1,000 workmen are said to be employed, and some 900,000 kroner ($241,200) are paid in wages annually. In a year, 35,000 tons of coal, 6,000 tons of limestone, and 3,500 tons of sulphur are used. About 23,000 tons of chemical pulp and 5,000 tons of paper are produced annually, besides some smaller products. There are annually used 840,000 logs. The managers have their own railroad and side tracks connecting with the main line, and employ 2 locomotives and 100 cars. The tracks also run from the landing place of the logs on the river to the mills, and from the mills to their own wharves at Mellas in Sannesund on the sea. The whole length of track is 9 kilometers (6 miles). The logs are first brought to a sawmill, where 8 circular saws cut them in pieces about 8 feet long. The pieces drop from the saws direct on the cars, and are transported to the drying room. When these pieces are seasoned enough and the bark taken off, they are cut into chips and boiled in a separate building, where 12 boilers, each holding 7 tons of pulp, are placed. In the boiling process, lime and sulphur are used. The pulp is then put into receivers, where it is ground and again mixed with water; then pumped into a separate building, where it is bleached. After undergoing some other processes, it goes into drying cylinders and finally comes out as pulp. The pulp is cut to pieces, packed and pressed by hydraulic power into small, compact bales. I am informed that the goods going to Belgium, France, and Italy have large, regular holes cut through them, for the purpose, it is said, of reducing import duty in these countries.

In the paper division in these mills there are 2 large boilers, each holding 10 tons, where the refuse from the pulp mills is boiled. Refuse paper and shrubs are also utilized. After boiling, the mass passes through mixing and grinding machines. When it has been ground, cleansed, colored, etc., it is brought into a system of cylinders and develops into paper. At the same time, two kinds of paper, of different thickness and color, can be made. The paper bales next go by elevator to the second story, where the paper is cut, packed, and pressed. Everything in these mills is made by machinery. There are several industrial plants in the same vicinity. The water power at Sarpsborg is great, and far more electric power can here be supplied than is now in use.

The principal pulp mills in my district number about 70, and the capital invested may be stated at 25,000,000 kroner ($6,700,000). Quite a number of the mills are of the old-fashioned pulp type, employing the grinding process. The methods employed in the manufacture of both paper and pulp are fast improving. Capital appears to be abundant, and, as long as the timber supply lasts, Norway will be a large exporter of paper and pulp. Some new railroads are under construction that will open new timber tracts.

IMPORTS.

According to official statistics, the importations of paper appear to embrace nearly all classes, which appears strange when the statistics for the exportations are also consulted. Jobbers in paper tell me that the importations consist chiefly of the finer grades of writing and drawing and of blotting paper. The Norwegian statistics (for all of Norway) classify and give the total importations of paper for the year 1897 as follows:

Kind of paper as classified.	Quantity.	Value.	
	Kilograms.	*Kroner.*	
Writing, drawing, and note	556,330	417,300	$111,836
Printing, blotting, and filtering	2,231,630	781,000	209,308
Pasteboard and wrapping	3,066,390	674,600	180,793
Building and wall	1,301,950	156,200	41,862
Tapestry, patterns, cards, and envelopes	580,922	579,000	155,172
Paper bound	36,678	73,400	19,671
Playing cards	6,408	33,300	8,924
Other papers and articles of paper	122,288	227,700	61,024
Total	7,902,596	2,942,500	788,590

The import duty paid was 176,089 kroner ($47,192).

The sources of the importations were:

Country.	Value.	
	Kroner.	
Sweden	1,082,800	$290,190
Germany	955,600	256,101
Belgium	360,400	96,587
Netherlands	295,500	79,194
Denmark	130,600	35,001
Great Britain	99,000	26,532
United States	15,600	4,181
France	3,000	804
Total	2,942,500	788,590

The kinds of paper imported from each of the several countries are not given, except in a general way. The paper from Sweden is mostly building and other coarse varieties. The finer papers come from the United States, France, Germany, England, Belgium, and the Netherlands. In the two foregoing statements, books, lithographs, globes, maps, charts, etc., are not included. Of these goods, some 2,754,000 kroner ($738,072) worth was imported in 1897. Denmark sent to the value of 1,750,400 kroner ($469,107); Germany, 578,700 kroner ($155,092); and other countries the rest.

The banking facilities with all European countries, with the United States and Canada, are good. Mail and telegraphic facilities are also perfect; mails pass every day.

IMPORT DUTIES.

The import duties on paper are:

Articles.	Duty.	
	Kroner.	*Cents.*
Pasteboard and wrapping .... per kilogram	0.03	0.8
Writing and drawing .... do	.13	3.5
Building, tar, wall .... do	.01	0.2
Tapestry .... do	.20	5.2
Ruled paper, cards, and envelopes .... do	.15	4
Playing cards .... per set	.15	4
Paper, bound .... per kilogram	.30	8
Books in foreign language	Free.	....

CONTROL OF TRADE.

The trade in finer papers, I believe, may be said to be controlled by Germany and Belgium. These people have their trade established; some houses also have local agents, and sometimes traveling agents are employed. German traveling salesmen are common.

For finer American papers and for blotting paper, I believe an opening can be found. Some of these are now being sold in this market, and they give satisfaction, but are rather expensive. By pushing the matter with the help of some active local agent, the trade might be increased. For American pulp, there is no hope in this market; but in other European countries Norwegian competition ought to be successfully met.

EXPORTS.

The exportation of paper from Norway (the whole country) consists of the classes specified in the statement already given. I am told that Norway exports large quantities of newspaper printing paper to England and to other countries. This would lead one to believe that printing paper in the official statistics is to some extent confused with wrapping paper, of which a large export is shown. It is not easy to obtain information from interested parties (and they are generally the only ones that can furnish it), as they all look upon these things as trade secrets, and the official statistics do not give all the information desired. According to the statistics, exports of paper for the year 1897 were:

Export of paper from Norway in 1897.

Country.	Writing and drawing.		Printing.		Wrapping.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*	*Kilograms.*	*Pounds.*
Great Britain					28,511,970	62,857,489
Germany	1,316	2,901			6,974,610	15,376,225
Sweden	264	582	577,909	1,274,058	1,196,400	2,637,583
Belgium					469,740	1,035,589
Denmark					298,420	657,897
Netherlands	20	44			1,212,230	2,672,482
Spain					42,950	94,688
France					23,480	51,764
Russia	80	176				
Island	295	650				
Australia					31,940	70,415
Egypt					15,200	33,510
Total	1,975	4,354	577,909	1,274,058	38,776,940	85,487,642

Country.	Building.		Tapestry screen.		Pasteboard.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*	*Kilograms.*	*Pounds.*
Great Britain					760,640	1,676,907
Germany			2,020	4,473	7,600	16,755
Sweden	353,820	780,032	117,370	258,754	32,910	72,553
Belgium	4,000	88,184	40	88	189,240	417,199
Denmark	1,000	2,205	13,360	29,453	50,440	111,200
Netherlands			6,730	14,837	13,330	29,387
Spain					4,640	10,229
Russia	5,010	11,045				
Island	4,180	9,215				
Total	368,010	811,315	139,520	307,586	1,058,800	2,334,230

The total of all kinds was 40,923,154 kilograms (90,219,185 pounds).

The foregoing gives goods of Norwegian origin and manufacture only, and the statement does not include goods of foreign origin reexported from the country. The table gives the exportations from the entire country, but more than three-fourths are from the consular district of Christiania. The export of wood pulp to the United States for the last six years has been as follows:

Year.	Value.	
	Kroner.	
1893	2,294,478	$614,920
1894	1,020,099	273,387
1895	745,783	199,870
1896	485,263	130,050
1897	224,496	60,165
1898	302,560	81,086

An English publication entitled the World's Pulp and Paper Industry, published in London, E. C., England, costing £1 1s ($5 11) per annum, which I have seen at the board of trade in this city, is used by Norwegian paper firms for advertising. Norway has no publication devoted to the paper and pulp industry exclusively, but some information may occasionally be gathered from general trade papers.

There are no export duties or tariffs on any class of paper or on wood pulp in Norway.

SCHEDULE FOR TRANSPORTATION.

Railroad rates.—Railroad rates for paper, all classes, are 0.044 krone (1.2 cents) per ton per kilometer. Railroad rates for pulp are: Moist pulp, 0.038 krone (1 cent) per ton per kilometer; dry pulp, 0.044 krone (1.2 cents) per ton per kilometer.

Steamship rates.—Steamship rates for paper of all classes and pulp for export to principal markets are as follows:

Christiania to—	Rate.
Paper.	
New York	20s. ($4.87) per 1,016 kilograms (2,240 pounds).
Hull	12s. 6d. ($3.04) per 1,016 kilograms (2,240 pounds).
Antwerp	16 francs ($3.09) per 1,016 kilograms (2,240 pounds).
Hamburg	12 marks ($2.86) per 1,000 kilograms (2,204 pounds).
Moist pulp.	
New York	10s. ($2.43) per 1,016 kilograms (2,240 pounds).
Hull	4s. 6d. ($1.09) per 1,016 kilograms (2,240 pounds),
Antwerp	9 francs ($1.74) per 1,016 kilograms (2,240 pounds).
Hamburg	7 marks ($1.66) per 1,000 kilograms (2,204 pounds).
Dry pulp.	
New York	12s. 6d. ($3.04) per 1,016 kilograms (2,240 pounds).
Hull	7s. 6d. ($1.82) per 1,016 kilograms (2,240 pounds).
Antwerp	16 francs ($3.09) per 1,016 kilograms (2,240 pounds).
Hamburg	12 marks ($2.86) per 1,000 kilograms (2,204 pounds).

Steamship ocean freights on paper from Hamburg to Christiania and from New York to Christiania are reported to me as follows: From Hamburg to Christiania, 40 kroner ($10.72) per ton; from New York to Christiania, 45 kroner ($12.06) per ton.

The foregoing transportation rates I have obtained from reliable sources, and I believe they are correct.

OUTLOOK FOR AMERICAN TRADE.

In conclusion, I would state that in my opinion the prospects for sales of American paper in this market are rather poor, but that an increased trade in the best grades of writing and in blotting paper might be established by proper effort. Some of this paper, direct from America, is now being sold here.

As for American pulp, there is, of course, no opening in Norway; but both in pulp and paper, the United States should be able to meet Norwegian competition in the European markets.

LIST OF PAPER AND PULP MILLS.

I attach hereto lists of the principal paper and pulp mills in my district. I regret that I have no way of learning their capacity.

Wood-pulp mills in the Christiania consular district, in accordance with S. M. Brydes-Norges Handels-Kalender for 1899.

Situation.	Number.	Capital invested.	
		Kroner.	
Drammen and vicinity	8	2,070,000	$554,760
Dyrstad	2	1,983,000	531,444
Eidsvold	1	260,000	69,680
Eidsvold's verk	1	1,720,800	461,174
Fetsund	1	75,000	20,100
Fredrikshald	1	3,400,000	1,011,200
Gjerstad	1	125,000	33,500
Gjovik and vicinity	3	222,900	59,737
Harestuen	1	10,000	2,680
Hangsund	1	Not stated.	
Helle	1	115,000	30,820
Hen	1	410,000	109,880
Hollen	2	Not stated.	
Hov i Land	1	112,000	30,016
Jevnaker	2	949,000	254,332
Köngsberg	1	120,000	32,160
Kragerö	3	389,000	104,252
Kristianssand	1	150,000	40,200
Larvik	1	Not stated.	
Lovied	1	Not stated.	
Hónefoss and vicinity	6	2,199,000	589,332
Sarpsborg	2	670,000	179,560
Skien	6	1,490,000	399,320
Skjerdalen	2	55,000	14,740
Snarum	1	270,000	72,360
Saterstóen	1	213,700	57,272
Skollenborg	1	500,000	134.000
Tuft	2	757,000	202.876
Tistedalen	1	75,000	20,100

Wood-pulp mills in the Christiania consular district, etc.—Continued.

Situation.	Number.	Capital invested.	
		Kroner.	
Vestfossen	3	757,000	$202,876
Vardal	1	193,000	51,724
Òiestad	1	282,600	75,737
Òrje	1	82,000	21,976
Òstre Lunner	2	16,000	4,288
Aamat paa Modum	3	999,000	267,732
Askim	1	Not stated.	....
Brandbu	1	19,500	5,226
Brekkeská	1	64,000	17,152
Total	70	20,754,500	5,562,206

I believe there are several small plants not entered in the directory. I know there are some of them near Drammen.

Paper mills in the Christiania consular district.

Situation.	Name.	Capital invested.	
		Kroner.	
Aadalsbrug	Klevfos Cellulose and Papirfabrik	154,000	$41,272
Bön	Bóhnsdalen Wood Pulp and Paper Mills, Limited	2,070,000	554,760
Drammen	Drammenselvens Papirfabrik	1,244,000	333,392
Do	Mórch & Hartmanns Tagpapfabrik	3,000	804
Sarpsborg	Borregaard Brug	395,000	105,860
Jevnaker	Randsfjords Tramasse and Papirfabrik	500,000	134,000
Kristianssand	Hunsfos Fabriker	Not stated.	....
Hönefoss and vicinity	Hofs brug (Paper and Wood Pulp)	334,000	89,512
Notodden	Tinfos Papirfabrik	125,000	33,500
Skien	Union Company (Union brug & Skotfos brug)	1,120,000	300,160
Tonsberg	Tonsberg Papirindustri	300,000	80,400
Total		6,245,000	1,673,660

HENRY BORDEWICH,
CHRISTIANIA, *February 16, 1899.* *Consul.*

BERGEN.

There are 4 paper factories in this district, 1 of them—Aktieselskabet Ranheims Cellulose Fabrik—using about 1,800 tons of wood pulp a year, chiefly in the manufacture of cheap wrapping paper.

Trondhjems Papir og Papfabrik, located near Drontheim, is a small factory and only manufactures for home consumption.

Alvöens Papirfabrik is located near Bergen and employs a force of about 63 men and 30 women. The output is about 200 to 300 reams of ordinary writing paper a day.

Saevareid Papir og Papfabrik is located near Bergen and uses water for its motive power. It employs a force of about 94 men and 10 women, the annual output being about 1,900 tons of paper and pulp. Nearly all of this paper is sent to England.

The paper used in Norway is mostly imported from Sweden, Holland, and Germany, and in the year 1897, according to official statistics, amounted to $788,590.

In the manufacture of paper, Sweden takes the lead in northern Europe.

VICTOR E. NELSON,
Consul.

BERGEN, *January 25, 1899.*

SWITZERLAND.

BERNE.

This consular district, comprising the Cantons of Berne, Freiburg, and Neuchatel, contained, according to the last census (1888), 763,987 inhabitants; but the approximate number to-day is 794,645. The proportion of illiterates is from 1 to 2 per cent. The Swiss of this district, if employed in the manufacture of paper, would be chary of accepting modern ideas and would doggedly stick to old traditions and methods.

CONSUMPTION.

Paper is used for newspapers, printed books, copy and mercantile books. Industries peculiar to the country requiring paper are book printing, lithography, school and business book factories, and newspaper publishing. The classes of paper used at present are pulp paper for newspapers which do not exceed sheets of 24 by 30 inches, letter and post paper, colored paper for posters, tissue papers, blotting paper, wall papers, cellulose and parchment papers. The last are required in rolls and the former in sheets.

The market price for news paper is $8.69 per quintal (220.46 pounds); for copy paper, $12.55 per quintal; middle fine paper, $19.30 per quintal; and for rag or linen, $26.06 to $30.88 per quintal. The terms are generally three months, with a discount of 2 or 3 per cent.

The question of consumption of paper and the value for the whole country is hard to answer. In the year 1897, the import of paper amounted to approximately 95,733 quintals, valued at $1,459,387; and the export was approximately 76,789 quintals, valued at $515,926. This does not include the import of dry pulp, which increased 36 per cent, or 7,681 quintals, during 1897, while the whole import of rags decreased to 65,000 quintals, against 71,000 quintals in 1896.

The export of liquid pulp, which is made from pine chips—the only wood available—to be bleached afterward, has increased, especially to France. The export of paper was nearly the same as last year. The exports of paper for writing and printing purposes are steadily decreasing, especially since 1895. The Argentine Republic, which, until that year, was a good customer of Switzerland, now seems to provide the supply through its own factories. A decrease in price is shown in packing paper and pasteboard, while the printed-book export has gained $69,094 in 1897.

In the official factory census of 1895, the returns of the number of people employed in the manufacture of paper and wood pulp in Switzerland showed: Males, 2,142; females, 1,113. In wall-paper factories the number was: Males, 82; females, 3—being a total of 3,340.

This district was enumerated at 587, as follows:

Canton.	Employed in wood-pulp manufacturing.		In manufacturing of paper.	
	Males.	Females.	Males.	Females.
Berne	185	17	99	102
Freiburg			43	14
Neuchatel	28		60	39

The city of Berne has a bureau of inspection for paper. The names of firms, companies, brokers, etc., belonging to the paper trade can be found in the commercial directory of Switzerland. There are about 450 newspapers published in this country. Articles made of pulp, such as indurated fiber ware, pulp moldings, etc., are an unknown quantity in this district, and, I may safely say, in Switzerland. Gun cotton, fine papers, tissue, celluloid are some of the articles manufactured from pulp.

The consumption of paper would increase if the people could be educated to demand clean wrapping paper, instead of being satisfied with the continental method of using old newspapers to do up purchases in the stores. Switzerland must necessarily be a purchaser of paper, by reason of her small output, for a long time to come. At present, Austria has most of the trade, with Germany a close second.

PRODUCTION.

In this district, there is very little undeveloped water power, every little rivulet being harnessed to perform some kind of work. The fuel used in the large mills consists of German and Belgian coal, wood being too expensive. A few gas engines are in use. The retail price of the Belgian coal delivered in my district is to-day $9.07 per ton in carload lots, while coke costs $7.72 per ton. Railroad facilities are good, but slow.

The only raw materials for wood pulp are pine trees, rags, and linen waste, and pulp imported from Germany. Paper-making machinery is made by Escher, Wyss & Co., of Zurich. There are at present 15 paper mills in Switzerland, employing 3, 5, and 7 machines, run partly by water power and partly by steam, with fairly up-to-date methods. Handmade paper is used very little.

IMPORTS.

The import comprises mainly fine tissue paper, fine glazed paper for printing books, fine English letter paper, and paper for lithographs and chromo printing. The market price per quintal (220.46 pounds) for tissue is at present from $19.30 to $24.13, and for book and chromo paper from $25.09 to $28.95, or more, according to quality. Austria and Germany furnish these fine papers.

The banking facilities of Switzerland are perfect, and the average rate charged borrowers in 1898 was 3¾ per cent. The duty on all classes of paper is 8 francs ($1.544) per quintal. Mail and telegraph facilities are excellent.

OUTLOOK FOR AMERICAN TRADE.

The opening for American paper and pulp and articles manufactured therefrom is, I think, most promising, especially for our poplar pulp, which would have the advantage over pine pulp of requiring no bleaching. Indurated fiber ware is another article unknown in this country. In the whole of Switzerland there is not a fiber or paper pail; nor, in fact, a wooden one. Common pine washtubs are used, which have a tendency to fall to pieces when wanted. The habit of using old newspapers for wrapping could be done away with if our machine-made bags were introduced here. A few come from Germany, but they are heavy and clumsy. Old newspapers sell for 1½ cents per pound. Packing paper on rolls has not been used as yet to any extent.

In answer to the question as to what course the United States should pursue in order to build up an export trade in this country, I respectfully refer to my report on "Commercial travelers in Switzerland," printed in Advance Sheets of Consular Reports No. 199 (August 22, 1898).*

EXPORTS.

Common paper is made here for the English market. Switzerland has no export duty. There is no special organ in this country for the paper trade. The Deutsche Papier Zeitung, issued in Berlin, is considered the standard periodical for this branch of trade.

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*Also in Consular Reports No. 217 (October, 1898).

TRANSPORTATION.

The method of transportation for bulk would be to the port of Rotterdam, thence by the water way of the Rhine to within the borders of Switzerland. Ordinary freight goes to Antwerp, and from there by rail direct to Switzerland. The ordinary freight rate from Antwerp, all rail, is as follows:

To—	220.46 pounds.	1,102.3 pounds.	2,204.6 pounds.
Basel	$1.16	$0.79	$0.72
Zurich	1.50	1.17	1.05
Geneva	1.98	1.43	1.31

The figures given in this report are from official sources, and other technical replies from memoranda furnished by reputable houses.

ADOLPH L. FRANKENTHAL,
Consul.

BERNE, *March 10, 1899.*

GENEVA.

Very little paper is manufactured in French Switzerland. There are only three mills, one of which is situated at Versoix, Canton of Geneva; one at Bex, Canton of Vaud; and the other at Serrières, Canton of Neuchatel.

It may be remarked that French Switzerland has by no means as many centers of industry as German Switzerland, and the latter, with the thriving manufactories of Zurich, St. Gall, Basel, etc., consumes by far the greater amount, in proportion to its size, of the paper imported into Switzerland.

The population of French Switzerland is about 800,000. The principal cities are Geneva, Sion, Lausanne, Neuchatel, Locle, Vevey, Chaux-de-Fonds, and St. Imier.

It may be safely stated that the percentage of illiterates in this consular district and in Switzerland generally is virtually nil. The Canton of Geneva, for example, devotes two-thirds of its budget to public education, which is compulsory throughout the Confederation; and Switzerland ranks high among nations in this respect.

There are one or two important paper dealers in this city who trade as middlemen with all Switzerland and the neighboring Departments of France. The chief firm of this kind, to whom intending exporters might do well to address themselves, is Georges Chanal, rue Ami Lullin, Geneva.

IMPORTS AND EXPORTS.

The majority of the paper in use is imported. Germany holds the first place on the list, as exporting the greatest quantity to Switzerland, being followed by France, Austria-Hungary, England, Belgium, and Italy.

There is no importation at all from the United States, although I have recently attempted to interest certain newspaper publishers and job printers in the possibilities of this trade, and at least one large printing establishment—the Imprimerie Suisse—through its president, Mr. C. E. Alioth, has been supplied with addresses by this consulate and proposes to communicate with them.

I have on previous occasions called the attention of the Department to the fact that no separate statistics exist for French Switzerland alone. I have compiled the following data from the figures published by the Federal Department of Commerce, and they will give an idea as to the present condition of the industry in this country. These figures are for the first nine months of 1898.

From January 1 to September 30, 1898, Switzerland imported 274 tons of damp fibers (229 tons from Germany, 11 tons from France, and 34 tons from Italy), of a total value of $6,725.28. She exported to France 929 tons of a value of $12,970.

Switzerland imported 2,458 tons of dry fibers (1,789 tons from Germany, 561 tons from Austria, etc.), of a total value of $118,525. She exported 3,270 tons, of a total value of $149,549.71, to the following countries:

Germany	$13,785.22
France	108,939.81
Italy	11,583.86
Belgium	14,668.00
Holland	572.82

The imports of printing paper and writing paper, one color, were:

	Tons.
Germany	952
Austria	276
France	153
Great Britain	67
Total	1,518

The total value was $210,466.

The value of exports is given as follows:

Germany	$7,499.78
Austria	1,121.13
France	8,234.54
Italy	3,463.77
Belgium	2,271.03

Holland	$33.00
Great Britain	2,086.71
Norway and Sweden	132.20
Spain	1,148.54
La Plata	1,012.48
Various	2,251.15
Total	28,872.22

The exports amounted to 166 tons.

The imports of paper of more than one color, painted papers, etc., during the period named, were:

	Tons.
Germany	499
Austria	8
France	127
Belgium	15
Great Britain	44
Various	7
Total	700

The total value was $175,640. The exports were valued at $6,486.27, of which $4,748 went to France.

Imports of binding and cardboard, etc., were 267 tons, of which 208 tons were from Germany, of a total value of $164,050.

The exports of cardboard amounted to 3 tons 16 cwt., the value being divided as follows:

Germany	$8,184.57
Austria	1,436.88
France	3,647.12
Italy	1,045.09
Belgium	766.59
Great Britain	915.55
United States	829.90
Various	2,011.64
Total	18,837.34

The figures for this period of 1898 show a great decrease from those for 1897, both in the imports and exports of damp fibers; while for dry fibers there is some increase in the imports, but a decrease in the exports.

Both the imports and exports of the various kinds of paper above enumerated are increasing, as is shown by the following table:

Description.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
Damp fibers:	*Tons.*		*Tons.*	
1897	291	$7,146	2,266	$30,611
1898	273	6,725	930	12,969
Dry fibers:				
1897	2,131	102,742	3,633	174,860
1898	2,458	118,525	3,270	149,550
Printing paper and writing paper, one color:				
1897	1,376	190,713	174	28,872
1898	1,519	200,815	166	27,921
Paper of more than one color, painted paper, etc.:				
1897	684	171,693	35	6,866
1898	700	175,640	39	6,477
Binding and cardboard:				
1897	228	140,301	33	16,754
1898	268	164,146	38	19,224

PRICES.

The following are, roughly, the wholesale prices of paper at the present moment per quintal (220.46 pounds):

Dry fibers	$6.17
Single-colored papers	19.30
Multicolored papers	38.60
Letter paper and envelopes	38.60
Labels, forms, bills, etc	38.60
White cardboard, paper cardboard	7.72

The names of the factories at which I obtained these prices are:

Papêteries J. Pupikofer, Bex, Canton de Vaud.

Messrs. Bristlen Frères, Versoix, Geneva.

Fabrique de Papier de Serrières, Serrières, Neuchatel.

BENJ. H. RIDGELY,
GENEVA, *March 15, 1899.* *Consul.*

ST. GALL.

I give below a report on paper, furnished this office by Mr. R. Sauerlander, vice and deputy consul at Aarau, Switzerland. He is a large publisher, and I asked him to furnish me with a report, as there are no industries here into which paper enters as an important factor.

JAMES T. DUBOIS,
ST. GALL, *February 28, 1899.* *Consul-General.*

REPORT OF VICE AND DEPUTY CONSUL AT AARAU.

The consumption of paper increases in Switzerland, as in other countries, from year to year. The manufacturers of paper make continual efforts to produce this article more cheaply, as well as to improve the quality thereof. The inclosed table shows the importance of the imports and exports of raw material. The exports considerably exceed the imports. The manufacture of cellulose suffers from overproduction. The Swiss mills furnish more than enough common paper. Prices are low, especially in consequence of foreign competition. Austria, for example, sells paper products at exceedingly low prices on the Swiss market. Although the Swiss manufacturers take pains to produce grades of paper (fine writing paper, note paper, and paper for art printing) of as good quality as that of foreign competitors, a great deal is still imported from other countries.

In my opinion, American manufacturers might succeed in exporting such paper to Switzerland. The duties on paper for art printing, lithography, etc., are high almost everywhere. Germany, Austria, France, and Belgium furnish most of the paper used in Switzerland.

There are about 500 printing establishments in this country, of which 270 do an important business, and their proprietors are mostly publishers as well. Besides these, a great number of factories (of embroideries, silk ribbons, knit goods) consume different kinds of wrapping paper. These factories, and especially the numerous chocolate mills that exist in Switzerland, display much care in the wrapping of their goods. Cheap specialties in this line imported into Switzerland might therefore find a ready market.

The most important paper mills are at the following places: Biberist, Zurich, Lanquart, Grellingen, Cham, and Balsthal. The other factories are of less importance, and some produce only special kinds of paper, such as cardboard, etc.

Paper for art printing and stained paper is, so far as I know, made only by one firm—Diem & Aberhamsly, Herisau.

PRODUCTION.

The following table of exports and imports gives particulars concerning the great quantities of raw material. The paper mills generally possess excellent water power, and have also, almost without exception, sufficient steam reserves. They are situated near railroads, have their own switches (if necessary), and are provided with all modern means of communication. The large mills always use machines of the newest kind. Special machines for the manufacture of paper are constructed in Switzerland.

Imports and exports in 1897.

Articles and countries.	Imports.			Exports.		
	Quantity.	Value.		Quantity.	Value.	
Rags of all sorts:	*100 kilos.*	*Francs.*		*100 kilos.*	*Francs.*	
Germany	45,798	1,008,000	$194,544	37,070	703,000	$135,679
France	18,423	405,000	78,165	....	....	....
Other countries	724	16,000	3,088	16,649	419,000	80,867
Total	64,945	1,429,000	275,797	53,719	1,122,000	216,546
Fibers for the manufacture of paper, wet:						
France	....	....	....	24,359	188,000	36,284
Other countries	....	....	....	494	4,000	772
Total	3,643	51,000	9,843	24,853	192,000	37,056
Fibers, dried:						
Germany	18,905	567,000	109,431	....	....	....
France	....	....	....	31,800	893,000	172,349
Austria-Hungary	8,912	196,000	37,828	....	....	....
Other countries	329	11,000	2,123	12,461	310,000	59,830
Total	28,146	774,000	149,382	44,261	1,203,000	232,179
Wrapping paper, not satined, of one color, wax and tar paper:						
Germany	5,784	174,000	33,582	....	....	....
Other countries	2,074	61,000	11,773	....	....	....
Total	7,858	235,000	45,355	946	58,000	11,194
Printing, writing, note paper, wrapping paper, satined, blotting paper, etc., of one color:						
Germany	10,300	773,000	149,189	....	....	....
Austria-Hungary	3,545	284,000	54,812	....	....	....
Other countries	3,390	304,000	58,672	....	....	....
Total	17,235	1,361,000	262,673	2,081	196,000	37,828
Variegated paper of all kinds, music paper, paper hangings:						
Germany	6,435	837,000	161,541	....	....	....
France	1,690	304,000	58,672	....	....	....
Other countries	845	140,000	27,020	....	....	....
Total	8,970	1,281,000	247,233	463	49,000	9,457
Note paper and envelopes in boxes, paper not specified:						
Germany	1,316	237,000	45,741	....	....	....
Other countries	812	162,000	31,266	....	....	....
Total	2,128	399,000	77,007	308	153,000	29,529

NOTE.—100 kilograms=220.46 pounds.

TURKEY IN EUROPE.

In compliance with the requirements of the Department's circular instruction, I submit the following information.

POPULATION.

The estimated population of Constantinople is about 900,000. Of this total, probably 50 per cent are illiterates. The people could easily learn the paper trade, the Greeks and Armenians being fair mechanics.

CONSUMPTION.

Paper is put to general uses in Constantinople, being employed for newspapers, circulars, writing purposes, tradesmen's bags, cigarettes, and as wall paper. The only peculiar industry which would necessitate the use of paper is the silk trade; for, owing to the disease among the worms, each moth is inclosed in a linen bag to lay her eggs, and these are afterwards examined for disease. Perforated paper for bags could well replace linen.

All kinds of paper are imported, the strawboard trade being especially large. Thick strawboard is imported in sizes 19¾ by 28½ inches; thinner strawboard, 12½ by 16½ inches. (Sizes may vary.)

The price for the above sizes is $1.75 per 100 pounds, wholesale; news paper, 28¾ by 43½ inches, is sold at $1.50 per 500 sheets (all market selling prices).

No statistics are available as to the quantities of paper imported. There are some 70 first-class paper sellers in this city, among whom are Chiminaghi, Vrouye, Economic Cooperative Society, of Galata, and Siegfried Adler & Co., of Stamboul. These last sell at wholesale only.

There are 42 newspapers published and 37 printing establishments.

No especial industry for manufacturing goods of paper ware exists; all papier-maché goods are imported.

Austrians and Belgians predominate in the paper trade.

PRODUCTION.

No practical statistics can be given as to the amount of undeveloped water power, the principal fall being a stream which has a descent of 1,500 meters (4,922 feet) down the Olympus, near Broussa, 70 miles from Constantinople. Very little water power is utilized.

Cardiff coal, delivered on shore, customs paid, can be obtained for 25s. ($6.07) per ton; native coal (good), for 16s. ($3.88) per ton; charcoal, 40s. ($9.72); and wood (Turkish oak), 12s. ($2.91) a ton.

Wood, waste rags, and old paper are to be had in large quantities, old rags being largely exported.

No paper-making machinery is made.

There is only one paper mill and that, through want of capital, was run for only a short time. There is, however, talk of buying the plant and resuming the business. Steam power is used.

Skilled labor is always to be had for 50 cents per day.

IMPORTS.

All kinds of paper are imported.

Banking facilities exist between this country and those engaged in the paper trade here. Telegraph lines are operated, and mail takes from two to four days in transit.

Estimates of the quantity and value of importations can be obtained only at great expense and labor. Import duties are 8 per cent ad valorem.

Foreign countries have their agents and commercial travelers here.

The United States manufacturers should appoint agents and obtain trial orders. They can certainly compete in news and some other kinds of paper.

CHAS. M. DICKINSON,
Consul-General.

CONSTANTINOPLE, *April 29, 1899.*

UNITED KINGDOM.

BRISTOL.

The population of the consular district of Bristol, according to the census of 1891, was 1,775,000; and there has since been only a nominal increase. The percentage of illiterates is very small, indeed.

PRODUCTION.

The manufacture of paper is a limited industry in this district. It may be said generally, however, that England is a large and increasing consumer of paper; that it manufactures and exports large quantities; and that it draws its supplies from domestic production, from the Continent, and from the United States. The paper-making industry is one of the best organized and most up-to-date of the many forms of English enterprise, with a great number of middlemen, a highly trained and able army of commercial travelers, and a large array of weekly and monthly trade journals.

The usual sizes of paper manufactured are presented in Appendix A. The cheapest news paper is to be had for 2½ cents per pound; for book printing, the price would range from 3 cents upward; for writing papers, from 4 to 24 cents; for handmade and drawing papers, from 36 to 48 cents. Terms are 5 per cent for one month, 2½ per cent for three months, net for six months.

The names, addresses, and nature of output of the paper manufacturers in this district are given in Appendix B. There are 96 papers published in the district, and the average number of printers in each town. There is no unusual or novel employment of paper.

The supplies of paper used in the district come largely through the great distributing houses of London, and the bulk is English made; but Norway, Sweden, Holland, Belgium, Germany, and Austria are represented more or less in the goods consumed in this district, as is also the United States.

The water power of the district is all utilized; but most of the paper mills are operated by steam power, burning Welsh coals, which are delivered at a charge of about $3 per ton. There are no indigenous fibers, and makers use rags, wood pulp, esparto, rope, and waste. No paper-making machinery is turned out in the district. Labor is cheaper here than in the thickly populated Midlands or north, girls earning a minimum of $2 per week, and men ordinarily up to $7. A few mills turn out handmade, but the bulk of the product is machine made, engine sized and tub sized. All plant is continually being modernized and the output increased. There are only 16 mills in this district, and these are by no means the largest in the Kingdom.

IMPORTS.

There is little direct import of paper into Bristol, as will be seen by appended tables; but most of the imported goods sold here come by rail from London. From the Continent or the United States come news papers, book-printing papers, brown glazed packing paper, colored poster-printing papers, writing papers, manila and cartridge papers, white and colored flint and enamel papers for box makers, fancy box papers, strawboards, wood-pulp boards, cardboards. The larger proportion comes through import houses in London, who send orders through the travelers and agents of continental houses calling upon them. These travelers and agents do not, as a rule, establish direct communications with buyers in this or other districts in England, but find it more convenient and economical to sell in large quantities to wholesale stationers in London, who are represented by branches in the other cities and towns.

There is a very good opening throughout England generally for United States paper products. This opening has been seen and energetically developed by our exporters, and the business is steadily growing. The best success has been found with cheap news and printing papers, with box boards for box makers, with manila cartridge and coated manila papers. I hardly think it probable that direct business between our manufacturers and consumers in this district can be satisfactorily or profitably inaugurated. It was attempted in one case within my knowledge in connection with printing papers; and the consumer here, owing to long distance, difficulty of communication, amount of explanation necessary to secure damage, allowance, etc., gave up the use of the American paper, though it reached him at an eighth of a cent under English prices. Subsequently, this same paper was offered to him through a London wholesale firm who had taken up the agency, and he resumed the use of it. Through the Bristol representative of the London firm the business is now conducted with a minimum of trouble and correspondence. It may be learned from this that our exporters should either establish branches and depots in London or should cultivate the great wholesale houses there. These houses are so firmly established, have so many branch houses, and employ such a large number of travelers that it would be cheaper to deal with them until business attains such magnitude as would justify an expensive and highly organized independent distributing organization.

EXPORTS.

There are no exports of paper from Bristol or the district.

LORIN A. LATHROP,
Consul.

BRISTOL, *March 13, 1899.*

APPENDIX A.

[From the London Directory of Paper Makers.]

Sizes of papers (these vary with some makers to the extent of even half an inch).

Name.	Writing and drawing.	Printing.	Brown and wrapping.	Cartridge and grocery.
	Inches.	*Inches.*	*Inches.*	*Inches.*
Ammunition				24 by 19
Antiquarian	53 by 31			
Atlas	34 by 26			
Cap (bag)			24 by 19½	
Cap (double bag)			39 by 24	
Cap (havon)			26 by 21	
Cap (kent)			21 by 18	
Cartridge				26 by 21
Casing			46 by 36	
Colombier	34½ by 23½			

Sizes of papers, etc.—Continued.

Name.	Writing and drawing.	Printing.	Brown and wrapping.	Cartridge and grocery.
	Inches.	*Inches.*	*Inches.*	*Inches.*
Copy	20 by 16			
Crown		20 by 15		
Crown (double)		30 by 20	30 by 20	30 by 20
Crown (quadruple)		40 by 30		
Demy	20 by 15½	22½ by 17½		22½ by 17½
Demy (double)	31 by 20	35 by 22½		
Demy (quadruple)		45 by 35		
Elephant	28 by 23	30 by 28	32 by 24	31 by 22
Elephant (double)	40 by 26½		46 by 31	
Emperor	72 by 48			
Foolscap	17 by 13½			
Foolscap (double)	27 by 17	27 by 17		
Foolscap (quadruple)	34 by 27	34 by 27		
Foolscap (sheet and third)	22 by 13¼			
Fooolsap (sheet and half)	24½ by 13¼			
Grand eagle	42 by 28			
Hambro' (single)				24 by 18½
Hambro' (double)				30 by 27
Imperial	30 by 22	30 by 22	29 by 22½	30 by 22
Imperial (double)		44 by 30	45 by 29	
Loaf (small double)				21 by 16½
Loaf (large double)				23 by 16½
Lumber hand			22½ by 17½	22½ by 18
Lump (single)				34 by 24
Lump (extra large)				36 by 24
Lump (double)				42 by 32
Medium	22 by 17½	23½ by 18½		
Middle hand				22 by 16
Post (small)	19 by 15¼	19¼ by 15½		
Post (pinched)	18½ by 14½			
Post (double)		31½ by 19½		
Post (sheet and half)		23½ by 19½		
Post (large)	21 by 16½			
Post (double large)	33 by 21			
Post (quadruple large)	42 by 33			
Pott	15 by 12½			
Powder loaf				26 by 18½
Purple, No. 3				26 by 17
Purple, No. 4				28 by 18½
Royal	24 by 19	25 by 20		25 by 20
Royal (super)	27 by 19	27½ by 20½		
Royal (double)		40 by 25		
Royal (quadruple)		50 by 40		
Royal hand				25 by 20
Single (small)				27 by 21½
Single (large)				29 by 23
Small cap			25 by 17	
Small cap (double)			34 by 25	
Small hand			20 by 15	
Small hand (double)			29 by 20	
Small hand (double-double)			40 by 30	
Titlers				35 by 29

APPENDIX B.—NAMES, ADDRESSES, AND CLASS OF OUTPUT OF PAPER MAKERS IN THE CONSULAR DISTRICT OF BRISTOL.

In Gloucestershire.

John Mardon, Limited, Bristol, brown and grocery papers.

W. J. Sommerville, Bilton, writing papers.

E. A. Chamberlain, Nailsworth, leather boards.

T. H. J. Daniels, Cam, leather boards and stiffenings.

Evans Adlard & Co., Cheltenham, blotting and colored papers.

J. Mason, Newnham, milled, engine, and handmade boards.

James Russell, Sydney, leather and boards.

In Somersetshire.

Bath Paper Mills Company, Bathford, colored printing, cover, tea papers, tinted large posts, and imitation parchments.

W. S. Hodgkinson & Co., Wells, handmade account book, writing and drawing.

Pyrie, Wyatt & Co., Wells, writing, cartridge, drawing, antique-laid printing, etc.

R. Sommerville & Co., Taunton, writing and fine printing.

Wausbrough & Worrall, Cheddar, manila and brown.

Wausbrough & Worrall, Watchet, brown.

In Wiltshire.

W. J. Dowding & Sons, Chippenham, grocery papers, royal hand and mill wrappers.

Mark Palmer & Sons, Salisbury, handmade writing.

In Dorsetshire.

H. C. Burt, Wimbourne, brown.

Imports of paper-making materials into the United Kingdom in the year 1898.

Articles.	Quantity.	Value.
	Tons.	
Linen and cotton rags	20,559	$943,141
Esparto and other vegetable fibers:		
From Spain	55,612	1,355,855
From Algeria	83,701	1,481,956
From other countries	58,028	903,450
Total	217,900	4,684,402
Wood pulp:		
Chemical—		
From Norway	91,165	2,854,416
From other countries	88,343	3,112,038
Mechanical—		
From Norway	141,455	1,750,221
From other countries	83,862	1,502,069

NOTE.—Of the above imports, between 3,000 and 4,000 tons come direct to Bristol from foreign countries.

Imports of paper, etc., into the United Kingdom in the year 1898.

Whence imported.	Quantity.	Value.
Paper:	*Cwts.*	
Sweden	540,586	$1,887,043
Germany	358,679	1,621,415
Holland	446,484	2,061,117
Belgium	233,998	1,364,381
Other countries	1,341,935	5,228,334
Total	2,921,682	12,162,290
Strawboards, millboards, and wood-pulp boards	1,999,693	3,550,680

NOTE.—Of the above imports, less than 2 per cent comes direct to Bristol from foreign countries.

DUBLIN.

The population of Ireland, according to the census of 1891, was 4,704,953. Of these, 71 per cent could read and write, 11 per cent could read only, and 18 per cent could neither read nor write. The present population is about 4,500,000.

MANUFACTURE.

A good deal of paper was formerly made in Ireland, the supply of native rags having been abundant and of good quality. At one time the culture of flax was widely diffused over Ireland, and almost every farmer in the country grew a patch of flax, which was steeped, scutched, and spun into yarn by the family to provide the various linen fabrics for domestic use. The rags collected through the country were consequently chiefly linen rags of superior quality. However, machine-made cotton goods extinguished this family industry, and the quality of rags deteriorated. This deterioration took place at the time when paper making was being transformed by the introduction of machiney; and the Irish mills being small, with little or no capital, they could not adopt the new processes, and so gradually went out of business. Now there are but nine mills, while in 1838 there were sixty.

The nine companies engaged in the manufacture of paper are:

The North of Ireland Paper Company, Ballyclare, County Antrim.
J. & A. Boardman, Tallaght, County Dublin.
Drimnagh Paper Mills, Crumlin, County Dublin.
Killeen Paper Mills, Inchicore, Dublin.
John McDonnell & Co., Saggart, Dublin.
John McDonough & Sons, Rathfarnham, Dublin.
T. Hegarty, Cork.
J. M. Ryan, Blarney, County Cork.
The Leinster Paper Company, Clondalkin, Dublin.

This last mill is not yet working, but is finished and expected to start in a month or two. It is fitted with the newest American machinery, and is said to be capable of turning out the best paper.

CONSUMPTION.

Paper is used in Ireland generally, as in other civilized countries, for writing, printing, and wrapping, wall paper, and, on a small scale, for roofing. There are no uses for paper peculiar to Ireland.

All kinds and qualities of paper are used. Generally, the banks and better class of business houses use the best handmade paper for their account books, but the larger proportion of paper is machine made. The sizes used are the same as in the United Kingdom generally. I can not give figures as to the quantity of paper used in Ireland, as most of it comes from England and Scotland, and no statistics of this trade are available. The direct imports of paper, including strawboard, amounted in 1897 to 108,697 cwts., valued at $453,183, and 200,420 cwts. of paper-making materials. valued at $231,431.

There are about 225 periodicals published in Ireland, of which 18 are daily papers and the rest weeklies, biweeklies, and monthlies. There are also a few books published.

I am unable to get recent statistics of the total number of printers and publishers, or of the users of paper. According to census of 1891, there were 4,241 printers and 1,852 bookbinders. Generally speaking, paper is used by almost every one in the country.

There are no manufactures of paper or pulp other than paper bags, account books, blank books, and a little roofing paper.

Most of the paper used in Ireland comes from England and Scotland, which practically control the market. Some is imported from Germany, Belgium, and the United States.

WATER POWER.

The water power of Ireland is well distributed and abundant. There are innumerable small streams with a fairly constant flow of water, many of them crossed and recrossed by the railways and canals. I have not seen any estimate of the water power, either developed or undeveloped. It is, however, quite sufficient for any needs of the country.

FUEL AND MATERIAL.

The only native fuels are coal and peat. Although the carboniferous area occupies a large part of the area of Ireland, the coal measures have been washed away, except in a few places. The coal fields which have escaped denudation may be placed in five groups. In two the coal is anthracite, and in three it is bituminous. The anthracite districts are in the southern half and the bituminous in the northern half of Ireland. But the amount of coal produced is small—almost inconsiderable. It probably does not exceed 125,000 tons. The annual consumption of coal amounts to about 4,000,000 tons.

In many parts of Ireland, especially in the central plain, there are extensive peat bogs, capable of yielding a large supply of fuel for many centuries. But, owing to the bulkiness of peat, the difficulty of drying it in Ireland, and the exorbitant railway rates for freights of all kinds, it is so expensive that it can not compete with coal, except under very favorable circumstances.

The raw materials in Ireland suitable for making paper, besides peat, are rags and straw. The supply of these is not sufficient, and both are imported from England, Germany, and Belgium.

MACHINERY.

No paper-making machinery is made in Ireland. That used comes from England, although some of it is made in the United States and Europe. One mill recently constructed, but not yet working, is fitted entirely with American machinery.

IMPORTS.

The foreign papers used are chiefly those for newspapers, high-glaze paper for half-tone illustrations and magazine printing generally, wall paper, brown papers, and some writing papers.. These papers are made in Holland, Belgium, Norway and Sweden, Germany, the United States, and France. Some of this paper comes direct, but most of it via England and Scotland. No statistics are published showing the sources of the papers coming into Ireland, but the tables for the United Kingdom for 1897 show that the imports of paper from the United States increased from 1,950 tons in 1893 to 32,050 tons in 1897, while the imports from Holland, Belgium, Norway, Sweden, Germany, and France increased from 139,150 tons in 1893 to 202,700 tons in 1897. Thus, while the United States increased its contribution to British markets more than 1,500 per cent, the other sources of supply did not increase quite 50 per cent.

The banking facilities in Ireland are excellent, there being about four hundred and eighty branches of the large metropolitan banks.

The mails from Dublin to European countries leave twice a day and are delivered in from one to three days, according to the place sent. The mails for the United States are sent via Queenstown twice a week, and, if so directed, via any boat from Southampton. They are delivered in the United States in from seven to fourteen days, according to place. The telegraphic service is under Government control and is excellent.

The use of American paper is growing, and can be increased. If our manufacturers wish to build up their exports to Ireland, they should send competent travelers with a full supply of samples and prices. Dealers expect manufacturers to bring their goods to their notice. An able traveler will do this. Catalogues usually go into the waste-paper basket.

There are practically no exports of paper from Ireland.

JOSHUA WILBOUR,
Consul.

DUBLIN, *March 13, 1899.*

DUNFERMLINE.

There are no paper mills in the city of Dunfermline, but in the counties of Fife, Kinross, and Clackmannan, with a total area of 611 square miles, which fully covers this consular district, there are 9 mills. The population of the three counties, according to the census of 1891, was 230,178, and is now estimated at 245,000, a good percentage being engaged in agricultural pursuits. The proportion of illiterates is comparatively small—about 1 in 5,000—and the people, as a rule, are intelligent, industrious, and enterprising, and many have mechanical traits adapted to the manufacturing industries. Technical education is growing in popular favor and is being encouraged and stimulated.

In my first endeavors to gather information relative to the paper industry of this district, I learned that it was useless to try to obtain the desired data direct from the paper manufacturers. The paper industry of Scotland is a very extensive one, competition is close, and the secrets of the trade are jealously guarded when a disposition to be inquisitive is shown by an outsider.

This being an inland consulate, no statistics of the consumption, production, exports, or imports of paper are available.

CONSUMPTION.

Aside from the general uses of paper in the ordinary forms, weights, and sizes called for by printers, publishers, and the wholesalers and retailers in the various classes of trade, the linen industries annually consume large quantities of paper and paper articles, such as Jacquard cards, casing paper, lining paper, tar paper lined with scrim for lining cases, press boards, and pasteboard boxes of various sizes and shapes.

Jacquard cards are manufactured in England and cost the linen manufacturers about £22 ($107) per ton f. o. b. Dunfermline.

Tar paper lined with scrim, size 32 inches, sells at 1½d. (3 cents), and size 40 inches at 1¾d. (3½ cents) per pound, less 15 per cent.

Press boards sell at 4½d. (9 cents) per pound, less 5 per cent.

There are about 12 small job-printing establishments and 21 weekly papers in the district, but no daily papers. Some of the weekly papers publish guides and directories.

There are no paper firms, companies, or brokers within the district.

Most of the paper consumed is of British make. The foreign paper consumed here consists largely of the cheaper grades of writing, job printing, hand bills, and wall paper.

About ten years ago, the Fife mills supplied this section of the country with news paper; previous to that time, the price had been 4d. (8 cents) per pound. It then fell to 2½d. (5 cents), and a year or two later dropped to 2¼d. and 2d. (4½ and 4 cents) per pound. The Fife mills refused to manufacture below 2½d. (5 cents) and went into job-printing papers and the better class papers.

About four years ago, Norway supplied the market at 1¾d. (3½ cents). Two years ago, the United States reduced the price to 1½d. (3 cents), which, under competition, was again reduced to 1¼d. (2½ cents). Norway then produced at 1¼d. (2½ cents), with 2½ per cent discount, and the United States did the same and kept the market.

Last year, Norway offered a nicer looking paper at 1¼d. (2½ cents), with 5 per cent off, and now has the market. Shipments are more reliable from Norway than from the United States, owing to the shorter distance. It is also claimed that United States paper can compete only when a low freight rate is obtained, in order to fill up a cargo, and consequently it is often left at New York when a better paying cargo is offered.

Great Britain receives unprinted papers from Norway, Sweden, Holland, the United States, Germany, and Belgium and printed papers from Belgium, Holland, Germany, France, and the United States, the relative importance of the different importing nations being in the order above given.

The consumption of all classes of paper is steadily increasing with the growing population and expansion of trade.

Wall and toilet papers are in greater demand than formerly, owing largely to a marked fall in prices during the last few years, especially in the cheapest grade of toilet paper, which has fallen from 6d. (12 cents) to 3d. (6 cents) per roll, retail.

There is a constantly growing demand for paper and paper articles consumed by the linen industry.

The consumption of Jacquard cards is increasing at a rapid pace, owing to the continual demand for new patterns. In former years, cards were used till worn out, but now they are laid aside in a comparatively short time and replaced by new ones. This change has created a demand for Jacquard cards of inferior quality at a lower price.

United States linen importers now require their goods put up in packages, with paper of special shades or tints as called for by their different customers in trade. To supply this demand, the linen manufacturers are often obliged to place special orders for paper and to keep on hand a more varied stock of colors than in former years.

PRODUCTION.

The 9 paper mills of this district are all operated by steam power, there being practically no water power in the district. They are located, equipped, and manufacture as follows:

Inverkeithing Paper Mills, Inverkeithing, Fife; 1 machine, 92 inches; half a mile from railroad station; blotting papers (white, colors, and interleaving), special parchment grease proof, imitation parchment, white and silurian parchment, writing papers, and wax parchments.

Balbirnie Mill, Markinch, Fife; 2 machines, 64 and 88 inches; cut paper; railroad siding into mill; machine glazed and unglazed double small hand, royal hand, and cartridge, cap, and grocery papers in sheets or rolls, and machine-made bags.

Millfield Mills, Leven, Fife; 2 machines, 84 inches each; railroad siding close to mill; machine-glazed biscuit cap and envelope papers.

Guard Bridge Paper Company, Limited, Guard Bridge, Fifeshire; 4 machines; railroad siding into mill; fine printing, news, drawing, music, plate and chart papers, E. S. writing and tinted papers (plate super and friction glazed surfaces).

Crook of Devon Works, Fossoway, Kinross; 1 machine, 52 inches; railroad siding one-fourth of a mile distant; lapping and manufacturers' paper.

Auchmuty Mill, Markinch, Fife; 2 machines, 72 and 92 inches; railroad siding into mill; printing, E. S. writing, long elephant, middle, blotting, and filtering.

Rothes Mill, Markinch, Fife; 2 machines, 48 and 60 inches; railroad siding into mill; gray, double small hand, fine royal hand, middle, pressing, colored long elephant, and glazed casing.

Forth Mills, near Alloa, Clackmannan; 2 machines, 66 and 92 inches; railroad siding into mill; fine printing and E. S. writing.

Strathendry Mills, Leslie, Fife; 1 machine, 62 inches; railroad siding; 1 mile from mill; E. S. writing and envelope papers.

Coal is the only fuel used here, and is very abundant. This being a very rich coal-producing district, fuel is very cheap. The qualities usually consumed by manufacturers range in price from 2s. to 5s. 6d. (50 cents to $1.30) per ton at coalpits. The cheapest grade might properly be termed coal refuse.

None of the paper mills here is more than 15 miles from the coalpits; some are in the immediate vicinity of the pits, and nearly all are connected with the pits by rail.

The only classes of raw material for paper making available here are rags and waste materials collected by dealers.

In former years, large quantities of esparto grass were imported at Burntisland for the Fife paper mills; but I am informed that very little is received now.

The linen factories furnish large quantities of raw material for paper making, in the form of old Jacquard cards, waste yarns, waste twines, and linen clippings. Old Jacquard cards are sold at £1 10s. ($7.30) per ton f. o. b. Dunfermline. Waste material of the other classes above named are sold to waste merchants at prices ranging from 17s. to £1 ($4.14 to $4.86) per ton, according to amount. Large quantities are shipped to the United States from Dundee and other ports.

Thousands of tons of raw material for the manufacture of paper are therefore annually produced by the linen factories in this consular district.

Engineers at Leith have made a specialty of paper-making machinery for years, and have now the best of facilities for that class of work. That city has consequently become the principal place in Scotland for the manufacture of paper-making machinery, and engineering firms here have given up making it; but parts of the paper-making machines manufactured at Leith are often cast in the foundries in this city. The contracts for the machines, however, go to Leith. The manufacture of paper is conducted generally on modern methods, and some of the mills have recently added new machines of the latest type.

Cost of labor at paper mills.

Workmen.	Per week.	
Males.	£ s. £ s.	
Foremen	1 1 to 1 10	$5.10 to $7.40
Engineers	1 15	8.62
Machine men	1 15 to 2 0	8.62 to 9.73
Laborers	18	4.38
Females.		
Finishers	16	3.89
Packers and folders	8 to 12	1.95 to 2.92

Price of British rags (Edinburgh).

Description.	Per cwt. (112 pounds).					
	s.	*d.*		*s.*	*d.*	
Superfines				15	0	$3.65
Outshots				12	6	3.04
Seconds				10	0	2.43
Thirds				7	0	1.70
Fourths				3	0	.73
Blacks				2	3	.53
Prints				5	6	1.34
Common prints				4	0	.97
First canvas				14	0	3.41
Second canvas				8	6	2.97
Light fustians				6	3	1.52
Brown fustians				4	0	.97
Dark fustians				3	0	.73
Round-hemp ropes				8	0	1.95
Shakings				6	0	1.46
White manila ropes	6	3	to	6	6	$1.52 to 1.58
Tarred	4	9	to	5	3	1.16 to 1.28
Brown papers				2	3	.53
Print papers				1	6	.36
News papers, folded	2	0	to	2	3	.49 to .53
Common papers	1	0	to	1	3	.24 to .30
Small letters				3	6	.85
Buff papers				4	0	.97
Common bagging	1	9	to	2	0	.43 to .49
Clean bagging	2	6	to	3	6	.61 to .85

Freight of paper-making material in 4-ton lots from Leith or Granton to Guardbridge Mill (the largest in this district) is 7s. 5d. ($1.80) per ton, station to station.

Price of Belgian rags.

Description.	Per cwt. (112 pounds).					
	s.	*d.*		*s.*	*d.*	
First white linens	20	0	to	22	0	$4.87 to $5.36
Second white linens	16	0	to	17	0	3.89 to 4.14
Third white linens				12	0	2.92
Gray linens	9	10	to	14	0	2.39 to 3.41
Superfine white cottons				18	0	4.38
White cottons				15	0	3.65
Light prints				7	0	1.70
Blue cottons	5	0	to	5	10	1.22 to 1.42
Light fustians				3	5	.83
Dark fustians				2	0	.49
House cloths, mixed				2	5	.59
New blacks				5	0	1.22
New fustians				6	0	1.46
New blue cottons				13	0	3.16
Light prints and oxfords	10	0	to	11	0	2.43 to 2.68

These prices are f. o. b. Ghent.

Freight, Leith (10s.), Dundee (13s.), $2.43 to $3.16. Freight from Leith to Guardbridge Mill in 4-ton lots is 7s. 5d. ($1.80) per ton. Freight from Dundee to aforesaid mill is 5s. 10d. ($1.42) per ton carted, or 2-ton lots 3s. 4d. (81 cents) per ton station to station.

Price of Dutch rags.

Description.	Per cwt.	
	s. d. s. d.	
Extra fines	13 0 to 15 0	$3.16 to $3.65
Outshots	9 0 to 10 10	2.19 to 2.64
Dirty fines	4 10 to 6 0	1.18 to 1.46
Light prints	7 0 to 9 0	1.70 to 2.19
Blue cottons	7 0 to 8 0	1.70 to 1.95
Colored cottons	3 10	.93
Fustians, light	4 0	.97
Fustians, mixed	3 0	.73
House cloths	3 0	.73

These prices are f. o. b. Rotterdam or Amsterdam.

Freight to Leith is 10s. ($2.43).

Prices of wood pulp (mechanical).

Description.	Per ton.	
	£ s. d. £ s. d.	
Pure air dry	4 7 6 to 4 10 0	$21.29 to $21.90
Pure 50 per cent air dry	2 5 0 to 2 7 0	10.95 to 11.43
Brown air dry	4 15 0	23.12
Brown 50 per cent air dry	2 10 0	12.16
Aspen air dry	6 0 0	29.20

These prices are cash in fourteen days ex steamer Leith.

The price of straw pulp for bleached pulp, extra quality, dry, in sheets is £13 to £14 ($63.26 to $68.13) per ton, net cash in fourteen days ex steamer Leith.

Prices of wood pulp (chemical).

Description.	Price.	
	£ s. d. £ s. d.	
Sulphite, bleached, extra	11 10 0 to 15 0 0	$55.96 to $73.00
Sulphite, unbleached, first	8 15 0 to 9 5 0	42.58 to 46.23
Sulphite, unbleached, second	8 5 0 to 8 10 0	40.15 to 41.36
Sulphate or soda, bleached	10 10 0 to 12 0 0	51.10 to 58.40
Sulphate, unbleached, first	8 5 0 to 8 15 0	40.15 to 42.58
Sulphate, unbleached, second	8 0 0 to 8 10 0	38.93 to 41.36

The prices are cash in fourteen days ex steamer Leith. Freight from Leith for all above to Guardbridge Mill in 4-ton lots is 7s. 5d. ($1.80) per ton station to station. Freight from Guardbridge Mill, the principal mill in this district, on printing and writing papers to principal ports of shipment, Leith and Granton, is 9s. 7d. ($2.33) per ton; station to station, or carted, it is 10s. 10d. ($2.64) per ton.

To Dundee, station to station, a special rate for 4-ton lots is quoted—5s. ($1.22) per ton; smaller quantities, 6s. 3d. ($1.52) per ton carted.

Prices of other paper-making articles.

Articles.	Per cwt.		
Canvas:	*s.*	*d.*	
No. 1	14	0	$3.41
No. 2	10	0	2.43
No. 3, brown	6	0	1.46
Tarred hemp coil rope	7	0	1.70
Solid white manila rope	7	0	1.70
Solid tarred manila rope	5	6	1.34
Mixed rope (broken hemp and manila)	5	3	1.28
White untarred hemp ropes	10	0	2.43

Free on rail Leith 5s. ($1.22) per ton more. Freight from Leith to Guardbridge Mill is 7s. 5d. ($1.80) per ton in 4-ton lots.

As all exports and imports leave this district indirectly through the principal shipping ports, no statistics are available.

Terms of sale to wholesalers are: Ninety days, 10 per cent; cash, 11½ per cent. To retailers the terms are: Ninety days, 5 per cent; cash, 6¼ per cent.

J. N. McCunn,
Consul.

Dunfermline, *May 18, 1899.*

EDINBURGH.

The Edinburgh consular district comprises, at least for the purposes of this report, the Lothians—the counties of Edinburgh (Midlothian), Linlithgow (West Lothian), and Haddington (East Lothian)—and the counties of Peebles, Dumfries, Berwick, Selkirk, and Roxburgh. The population of these divisions of Scotland in 1891, according to the census taken in April of that year, was as follows:

Division.	Population.	Division.	Population.
Edinburgh	434,159	Peebles	14,761
Linlithgow	52,808	Selkirk	27,352
Berwick	32,406	Roxburgh	53,741
Haddington	37,485	Dumfries	74,221

The total population of the eight counties was 726,934. Only in the case of one of these counties, I believe, has an official estimate of the population been made since the date of the last census. There has been an increase, but not large. Probably the number of inhabitants of this district is to-day between 775,000 and 800,000. To say that they are people of a high grade of intelligence is only stating what all well-informed persons everywhere have long known. In no other part of the United Kingdom is education more widespread, the search for knowledge more eager, the habit of study more general, and civilization at a higher level than in the east of Scotland. Curiously, no official census report for Scotland touches illiteracy, and there is no direct means of ascertaining the percentage of illiterates; but the chief inspector of schools in Edinburgh expresses the opinion that "with the strict enforcement of the compulsory clauses of the education act, the number is extremely small and steadily diminishing."

In regard to the uses of paper, no one could safely venture to say what it is not used for, except as an article of diet. But the only notable purposes to which paper is applied in this district are the common ones of printing, writing, wrapping, etc.

If "the consumption of paper is the measure of a people's culture," as someone has written, this city can afford to invite comparison, in respect to advancement, with any other community in Europe. This local demand, long existing and constantly growing, has had the effect of making paper manufacture an industry of the first importance here.

PRODUCTION.

Midlothian is the seat of the paper-making industry in Scotland. Many of the mills have been in operation more than fifty years. Bank Mill, Penicuik, the beginning of the present Valleyfield Mills, was started in 1710. It may be said, therefore, that paper making is one of the oldest industries in the Lothians.

There are in this district 23 paper mills, including millboard mills. They are almost wholly in Midlothian. Only 6 are in other counties—4 in Linlithgow and 2 in Berwick. The names and locations of the mills in Midlothian, the name of the firm or company owning each, and the distance from a railroad terminus in Edinburgh, are here given:

Polton Mills, Polton (8 miles); Annandale & Son, Limited.
Esk Mills, Penicuik (15½ miles); James Brown & Co., Limited.
Kinleith Mill, Currie (6 miles); Henry Bruce & Sons.
Valleyfield Mills, Penicuik; Alex. Cowan & Sons, Limited.
Bonnington Paper Mill, Bonnington (3 miles); James Henderson.
Balerno Bank Mills, Balerno (8 miles); Hill, Craig & Co.
Inveresk Mills, Musselburgh (5 miles); Inveresk Paper Company.
Portobello Mill, Portobello (3 miles); Alfred Nichol & Co.
Woodhall Mill, Juniper Green (6 miles); Henry Parker.
West Mill, Colinton (3½ miles); John Plummer.

[illegible] Mill, Mid-Calder ([illegible] miles): Alan Robertson & Co.

[illegible] Mill, Colinton: Andrew Scott & Co.

Slateford Mills, Slateford (3 miles): Slateford Paper Mills, Limited.

Dalmore Mill, Milton Bridge (13 miles): William Sommerville & Son.

St. Leonard's Mills, Lasswade (8 miles): John Tod & Son.

Springfield Mills, Polton: William Tod, jr., & Co., Limited.

Spylaw Mill, Colinton: Alexander Fairgrieve.

In West Lothian are:

Loch Mill, Linlithgow (17½ miles); Thomas Chalmers & Sons.

Avon Mills, Linlithgow; J. Lovell & Son.

Westfield Mill, Westfield (22 miles); Westfield Paper Company, Limited.

Hopefield Mills, Bathgate (17 miles); Guild, Richardson & Co.

In Berwickshire are:

Chirnside Bridge Mills, Ayton (50 miles); Y. Trotter & Son, Limited.

Bleachfield Mill, Ayton; William Martin.

These mills have altogether 39 machines, ranging from 54 to 100 inches, and make a great variety of paper, from the finest writing and printing to the coarsest millboards. The list of the kinds of paper produced is a long one:

Account book
  Hand sized.
  Loft and air dried.
Antique laid
Antique wove.
Art board.
Art papers
Art papers, special surfaced.
Azure laids.
Azure wove.
Bank papers
Browns
Blue laid
Blue wove
Cartridges.
Casings
Chart
Chromo, machine.
Chromo, machine, boards.
Copy book papers.
Cover papers, "Irish frieze," etc.
Colored papers
Drawing
Druggists' papers.
Duplex papers
Duplex papers, job.
Envelope, engine sized and tub sized, angular and square.
Filtering.
Fly papers.
Glazed casing.
Grayboards.
Illustration papers.
Leather boards.
Lithograph.
Lithograph, special surfaced.
Loan, loft and air dried.
Map.
Middles.
Mill wrappers, white, brown, gray, and colored.
Millboards.
Music.
News, web.
Pamphlet.
Paper felt.
Parchment, imitation.
Pasting.
Plate papers, fine and superfine.
Portmanteau boards.

- Pressing boards and pressings.
- Printing:
  - Fine and superfine, white, toned, and colored.
  - Deckle edged, white and tinted, ordinary and antique.
  - Imitation handmade.
  - Supercalendered for dry printing.
  - Glacé.
  - Glazed finish.
- Programme.
- Pulp boards, white and tinted.
- Ream wrappers.
- Tea papers.
- Typewriter papers.
- Writing in great variety, fine, superfine, extra superfine; animal sized, engine sized, tub sized; air dried, loft dried; white, tinted, and colored.

The total product is closely estimated by leading men in the trade (there are no official or exact returns) at 1,200 tons per week. The British ton being 2,240 pounds, the weekly product in pounds is 2,688,000. By far the larger part of the output is writing and printing of all grades. The production of these classes of paper and of news print amounts to 930 tons per week. It should be added that a very small proportion is news, either common or fine; the quantity is almost insignificant. An insight into the industry and into the general character of the product, as well as the amount, can best be afforded by showing the kinds (specialties) and total quantity of paper made by each of the 14 mills turning out the vast bulk of the paper manufactured here. The following statement has been carefully prepared, and in the matter of paper production in the Lothians it is more complete and more nearly accurate than that given by the Paper Mills Directory and Year Book of the Paper-Making Trade for 1899. It is kindly furnished by one of the best-informed paper makers in Scotland, who took unusual pains to ascertain the facts. The rates of production given are, per week:

Annandale & Son, Limited.—Superfine tub-sized papers, bank, account, book, and envelope papers; 1 machine, 63 inches; production, 20 tons.

James Brown & Co., Limited.—Supercalendered printing, lithograph, map, and copy-book papers, superfine enameled, art, and chromo papers; 4 machines, 60, 62, and 2 of 74 inches; production, 120 tons.

Henry Bruce & Sons.—Printing, plate-glazed, and supercalendered papers, plate, chart, and deckle-edged papers; 3 machines, 70, 80, and 83 inches; production, 100 tons.

Alex. Cowan & Sons, Limited.—Loft and air dried loan and account book papers, animal-sized papers, plate-glazed and supercalendered papers, coated illustration papers, and typewriter papers; 4 machines; production, 110 tons.

Hill, Craig & Co.—Writing, supercalendered printing, news, tinted papers, tea papers, and imitation parchment; 2 machines, 96 and 100 inches; production, 90 tons.

Inveresk Paper Company.—Writing, fine printing, lithograph, and map papers, superfine and chromo papers; 3 machines, 76, 90, and 100 inches; production, 110 tons.

Alfred Nichol & Co.—Writing, chromo, and printing papers, envelope papers, special hand-sized account book; 1 machine, 82 inches; production, 25 tons.

William Sommerville & Son, Limited.—Fine and superfine printing, writing, supercalendered papers; 2 machines, 63 and 86 inches; production, 75 tons.

William Tod, jr., & Co.—Fine news and printing, lithograph, supercalendered papers, and writing; 2 machines, 54 and 64 inches; production, 55 tons.

John Tod & Son.—News, printing, drawing, and lithograph papers, supercalendered tinted papers; 1 machine, 63 inches; production, 20 tons.

Thomas Chalmers & Sons.—Fine printing, writing, and tinted papers, art papers; 1 machine, 92 inches; production, 30 tons.

J. Lovell & Sons.—Writing and printing papers; 1 machine, 74 inches; production, 25 tons.

Westfield Paper Company, Limited.—Fine printing, writing, lithograph, and tinted papers, enameled art and chromo papers; 2 machines, 63 and 93 inches; production, 60 tons.

Y. Trotler & Son, Limited.—Superfine writing, parchment, copybook, and lithograph papers, supercalendered and plate-glazed papers; 3 machines, 64, 86, and 88 inches; production, 90 tons.

Six mills make brown papers and coarser grades:

Slateford Paper Mills, Limited.—Rope and other brown, mill wrappers, and carpet felt.

Adam Robertson & Co.—Lapping and duplex and triplex mill wrappers.

Andrew Scott & Co.—Brown, lapping, and mill wrappers.

John Plummer.—Casing, cartridge, gray, duplex, and colored papers.

Henry Parker.—Duplex and mill wrappers.

James Henderson.—Rope and other brown, carpet felt; white, brown, and colored mill wrappers; middle, filtering, pressing, and fly papers.

A prominent manufacturer of these classes of paper informs me that a liberal estimate of the total production would be 170 tons per week.

Alexander Fairgrieve, William Martin, and Guild, Richardson & Co. produce millboards, leather boards, portmanteau boards, fence board, and gray board. Little direct or definite information can be obtained as to the production in this branch of the industry, but

I am able to say on good authority that the output of all kinds is not far from 100 tons per week.

In most of the mills, especially those devoted to the making of printing and writing papers, the methods of manufacture are thoroughly modern. No handmade paper is produced here. The mills, with few exceptions, are equipped with up-to-date machinery, nearly all of which is made in Edinburgh by a company quite celebrated for work in this line. Certain parts of the paper-making machines turned out by this company are purchased from manufacturers in the United States—the chilled rollers, which are used for calendering the paper, and friction clutches.

The power used in every large mill is steam. For minor purposes, water is here and there employed as power for a paper mill; but it is an unimportant factor. This part of Scotland has practically no water power, either developed or undeveloped. Fuel is a rather expensive item for the paper mills. Scotland produces an enormous quantity of coal; but the demand for home consumption and for export is very great, and, as a consequence, the price of the common bituminous coal to the mills most favorably situated exceeds $2.50 per ton. The average price paid by the mills in this district is about $3.15, delivered. Owing to pollution questions, great ingenuity has been exercised in perfecting the process of paper making, and remarkable strides have been made during the last twenty years; but the cost has been considerable. And, moreover, on account of the smallness of the streams and the number of mills and towns along the banks, most mills are still under the necessity of purifying the water before using it. In this respect, natural advantages are unevenly distributed; and some mills find themselves handicapped in the keen competition, wherein every item of expense has a serious import.

For many years, up to the end of 1897, production had been steadily increasing. It remained practically stationary in 1898. At the present time, there is no indication of an increase. The trade is active; but paper makers complain of the depressed prices, and the effect of foreign competition is becoming more palpable.

MATERIALS.

The raw materials are rags, esparto (Spanish and African), wood pulp, and waste of all sorts. From rags, the yield of paper is 90 per cent; from Spanish esparto, 55 per cent; and from African esparto or "Oran grass," as it is generally termed, 50 per cent. News print is largely made out of mechanical wood pulp, though there is a tendency to improve the quality by the addition of a small proportion of common rags. The materials here entering into the several classes of millboard and kindred products vary considerably, according to the quality of the product. In the cheapest class, known as "gray board," there is no bagging or rope. It is made principally of the very coarsest refuse paper, old strawboards, and a special variety of mechanical wood pulp. In millboard proper, either old bagging or condemned rope (generally hemp), or both, is introduced. The better the quality the larger the proportion of rope. The best qualities of this class of product are known as "leather board" and "portmanteau board." Very little paper or wood pulp enters into their composition, the stock used being chiefly old rope and bagging.

The domestic supply of rags is large, but it does not expand; and this is true also of the waste in bookbinderies and printing houses and other establishments. The coarser materials, in great variety, used with mechanical wood pulp in the manufacture of brown papers are plentiful. No wood pulp is made here. Scotland has a scant supply of wood. One of the most important imports at Leith (the port town of Edinburgh) is wood for a score of common uses, such as building and cabinetmaking. A factory for the manufacture of wood pulp was started some years ago at Inverkeithing (about 10 miles from Edinburgh, on the northern shore of the Firth of Forth), but it was found that it could not be run on a paying basis and was soon closed.

The market prices of cotton rags vary considerably, according to color and cleanliness, white rags, of course, being the most valuable. Prices range all the way from $12.15 to $72.90 per ton. Old ropes are from $19.44 to $72.90 per ton. Old white manila ropes are $31.50 per ton and tarred hemp shakings about $32.50. There are three qualities of linen rags, viz: White linens, $73 per ton; gray linens, $48.67 per ton; and soiled linens, $24.33 per ton. For common wastes, such as are used in brown papers, the price is about $9.72 per ton. Waste paper is from $20 to $37 per ton, according to quality. These are not the prices at the mills, but in Edinburgh and Leith. The freight rates paid by the mills at Penicuik and Linlithgow on rags and waste from Edinburgh range from 80 cents to $1 per ton. The ordinary freight charges for this class of goods between these points are from $1.10 to $1.20 per ton, but the paper mills have special rates.

The importations of linen rags are comparatively small. They come chiefly from Germany. Cotton rags are imported from Egypt and more extensively from Holland and Belgium, the "Dutch cottons" being much preferred to any other of the ordinary grades of rags; esparto comes from northern Africa (Algeria) and Spain, and wood pulp chiefly from Norway and Sweden. The freight tariff on rags from Egypt is $5.35 per ton, and from Hamburg, Amsterdam, and Antwerp, about $3.15. On esparto from Barcelona, the rate is from $3.60 to $4.40; from Africa, $4.85. On wood pulp from Norway and Sweden the freight rate varies from $1.80 per ton for moist to $3 for dry. The average prices of these imported materials per ton, freight paid, are:

Articles.	At Leith.	At Penicuik.
Rags:		
Cotton	$37.60	$38.60
Linen	48.60	49.60
Esparto:		
Spanish	26.70	27.65
African	17.00	17.95
Chemical pulp:		
Sulphite—		
First quality	40.00	41.00
Second quality	36.40	37.40
Sulphate—		
First	40.60	41.60
Second	37.00	38.00
Mechanical pulp:		
Dry	21.85	23.05
Moist (50 per cent moisture)	10.95	11.95

The local freight charges indicated, from Leith to Penicuik, are practically the same as from Edinburgh to Penicuik, and the rates from these points (the North British Railway goods station in Leith and in Edinburgh) to Linlithgow are slightly higher, and to Polton, Lasswade, Musselburgh, and Portabello somewhat lower. These rates do not, I understand, include cartage at either end. Most of the mills have sidings and excellent facilities for the easy and quick handling of coal, materials, and goods.

As to the quantities of raw materials imported, statistics are difficult to obtain. Absolutely reliable figures can be procured only at the department of customs, London. This applies to manufactures as well. The local customs authorities are not at liberty to give out information from the official records. From other sources, I have ascertained that there were imported into the Edinburgh district by water last year, in round numbers, 6,000 tons of rags, 12,000 tons of wood pulp, and 51,000 tons of esparto.

It will be observed from the quantity of esparto (also known as alfa) imported that it is a most important factor in the manufacture of paper in this district. As already indicated, it comes only from Algeria and Spain. Attempts have been made to grow it elsewhere—in the British islands, for instance—but they have been entirely unsuccessful. The value here of esparto has fluctuated little within the past few years. It is imported in hydraulically compressed bales of practically uniform weight and size. Approximately seven bales go to the ton, the bales being thus about 3 cwts. each. There is no particular season for importing it here. It comes in about the same quantities all the year round.

Of the wood pulp used, besides that from Norway and Sweden, a small quantity comes from Germany. None ordinarily comes from the United States, although for a few months last year a good deal of American wood pulp was used, owing to the temporary rise in freight rates from Scandinavian ports. Almost all of the wood pulp brought here (the greater part of it is the mechanical kind, though a fair proportion of chemical pulp is also imported) is used in the manufacture of ordinary papers; but there is also a special variety of mechanical pulp—which is known as "wood-pulp boards" and is in the form of sheets, generally about 3 feet square, but sizes vary—imported for use in the manufacture of millboard and gray board. Except that it is almost invariably brought in bales (occasionally the chemical kind comes in rolls), there is no uniformity in the packages in which the wood pulp arrives, the different makers varying considerably in the size, weight, and style of their packages; but both chemical and common mechanical are in bales of roughly 2, 2½, and 4 cwts. each. The few rolls which come range in weight about six or seven to the ton. The "wood-pulp boards" are brought in bales of from 4 to 5 cwts. each.

No strawboard is made in Scotland. The reason for this lies in the general high price of straw. Strawboard is made to some extent in England, but the great bulk of that used in the Edinburgh district comes from Germany and Holland.

LABOR AND WAGES.

Not a few of the prominent mill owners claim with a good deal of pride that the long-established mills in Scotland "have been the training schools for the paper industry throughout Europe and America." They say that many of the best practical paper makers in the world were bred in Midlothian and began their careers humbly as workmen in mills on the Esk and elsewhere. And they do not quarrel with the suggestion that some of the graduates may have got ahead of their teachers.

The present number of employees is given below, approximately:

District.	Males.	Females.	Total.
Midlothian	1,621	1,264	2,885
West Lothian	125	90	215
Berwickshire	135	67	202
Total	1,881	1,421	3,302

The wages paid per week to the working people in the various departments of those mills which manufacture the better grades of writing and printing papers are as follows:

Workmen.	Wages.	Workmen.	Wages.
Paper-machine men	$8.52	Assistant paper finisher	$6.08
First assistant	4.87	Head bater	7.79
Second assistant	3.65	Assistants	4.87
Beater man	7.30	Head calendar man	7.30
First assistant	5.35	Assistants	6.08
Second assistant	4.87	Cutter man	5.84
Potcher man	6.08	Fitter	6.81
First assistant	5.35	Turner	7.30
Second assistant	4.87	Blacksmith	6.81
Press patê machine man	5.84	Hammer man	5.35
Assistant	2.43	Plumber	7.30
Head esparto boiler man	7.06	Greaser	5.35
Assistants	5.84	Steam-boiler man	6.08
Head roaster man	7.54	Assistants	5.60
First assistant	6.57	Women:	
Second assistant	5.84	Rag-house woman	2.92
Caustracing man	5.84	Overhaulers in paper salle	3.40
Assistant	4.62	Finishers in paper salle	3.89
Laborers	4.38	Cutter girls	1.46
Head paper finisher	8.03		

This table of wages was prepared by the assistant manager of one of the mills and was verified by the manager.

In the mills making wrapping paper and other coarse grades, and also in the millboard mills, the average wages are somewhat lower.

CONSUMPTION.

The total number of printers (printing houses), large and small, in Edinburgh and district is 168. There are 80 publishers, including publishers of newspapers. There are 27 regular publications—newspapers, magazines, and reviews. The compositors in this city number 2,400—about 1,700 males and 700 females.

In the printing and publishing trades, there are several huge concerns, each of which has a history running far back into the last century. They have made Edinburgh famous as a center of production of educational works of every description, of all classes of books found in a general library, of encyclopedias, of maps and atlases, and of lithographic and art printing. The books published here do not represent the whole amount of book printing done. A great deal of printing is done for London. Practically all of the books issued by some of the well-known London publishers come from Edinburgh presses. Last year, the enormous editions of the Encyclopædia Britannica for the Times were worked off by three or four large offices in this city. The quantity of paper used was not far from 1,700 tons. Upward of 25,000 sets were printed. This enterprise, by the way, was in the hands of an American syndicate, represented by the Times in the United Kingdom. The first edition of 5,000 copies was printed on American paper. Cheap editions of some of the standard novels were issued last year, as was also the Edinburgh edition of Robert Louis Stevenson's books. The general printing business in 1898, which was above the average, and the printing of the encyclopædia and of these novels required a tremendous quantity of paper.

An important trade has been developed in what is called "art paper," produced now to a considerable extent by some of the Midlothian mills. The consumption of this class of paper has increased vastly in recent years. Art papers originated in the United States. A company having mills near Edinburgh was among the first on this side of the water to adopt the process, or one of the processes, of making the paper. Commenting on the enterprise of these paper makers in learning the secret of art paper, a member of a prominent printing house said to me:

> But the Americans make the best art paper; not only that, the American mills produce the best printings in general. They put a fine "skin," or finish, on the paper.

As to what proportion of the entire output of the paper mills in the Edinburgh district is consumed in this market, the estimates of men in the trade differ widely. A conservative estimate places it at a third of the total value of the product. Of course, the class of paper chiefly used is printing. A third of the annual product of all kinds of paper (in value) would be not far from $3,250,000. A well-informed dealer ventures the opinion that an amount equal to the proportion of the home product consumed here is brought from other parts of Scotland, from England, and from foreign countries. This would make the total annual consumption of paper of every description in Edinburgh and district $6,500,000. Not less than two-thirds of this large paper bill is for printings. There are neither statistics nor data of any kind available for a further estimate of the relative quantities or values of the other classes of paper consumed.

It may not be out of place to say that there is a large demand in this part of Scotland for millboards and similar products. One of the principal users of millboards and leather boards in Edinburgh mentioned to me that when in the United States recently, he was considerably interested in certain products in which highly compressed paper was made to take the place of metal. He is convinced that the manufacturers of these products, by applying themselves to the problem, could turn out a pure paper, or a paper and fiber compound, which would entirely oust mill and leather boards from use in such manufactures as portmanteaus, trunks, etc. What is desired is a material which will be hard and durable and sufficiently tough to admit of being sewn without danger of afterwards tearing along the line of stitches. He says:

> The best size of board for use in the portmanteau and trunk trade would be 36 by 54 inches and the gauges 14 and 16 Birmingham wire gauge. A board of this description should not weigh more than from 3 to 3½ pounds. The better class of makers use only the best leather board and millboard. They would welcome a better material, especially if it could be furnished without increased cost.

I have received from the manager of a large mill the following statement of the range of prices per pound of printing, writing, and other papers:

Description.	Price.	Description.	Price.
	Cents.		*Cents.*
News	3 to 6	Lithograph and chromo papers	6
Machine-finished printing	4½	Map papers	7
Supercalendered printing	5	Plate-glazed papers	8
Superfine printing	5½	Loft-dried papers	16 to 20
Supercalendered superfine printing	6	Animal-sized papers	7 to 10
Writing	5 to 12	Enameled papers	7 to 10

The prices of millboards, etc., are generally quoted per cwt. in this market. The following are the current prices per cwt. (112 pounds) of representative grades of several of these materials. They are from samples of the products of two of the three millboard mills in this district:

Gray board (medium quality)	$2.19
Millboard:	
Medium quality	4.38
Fair quality	5.11
Leather board:	
Good quality	5.96
Finest quality	6.81

As I have stated, strawboard is not made in this country. The prices of ordinary kinds range in Edinburgh at present from $1.41 to $1.9[illegible] per cwt. (112 pounds).

Grocery papers range in price from $1.82 to $3.65 per cwt.

From a source mentioned in a preceding paragraph, I have obtained a more detailed list of prices, covering nearly all grades of paper, except grocery papers and the like.

List of prices.

Description.	Unit.	Value.
Account-book papers:		
Handmade, not under 21 pounds, large post	Per pound	$0.24
Record	do	.21
Extra strong	do	.17
Fine book	do	.13
Another quality, not described	do	.10
Tub sized, plain	do	.09½
Super, engine sized, azure laid	do	.07
Second quality	do	.06
Writing papers:		
Extra superfine—		
"Ivory"	do	.23
Loft dried	do	.23
Superfine	do	.18
Extra strong	do	.17
Extra fine	do	.16
Extra fine, another quality	do	.14
Fine	do	.13
Fine, plain	do	.12
Fine	do	.11
Second fine, plain	do	.09½
Second, another grade	do	.09½
Third fine	do	.08½
Tub sized	do	.08
Super E. S., cream, azure and yellow	do	.07
Super E. S., esparto, best quality	do	.06½
Second quality E. S.	do	.06
Bank writing papers:		
Extra superfine—		
Large post	Per ream	3.16
Medium	do	3.65
Extra strong—		
Large post	do	2.19
Medium	do	2.55
Linen, special grade, large post	do	1.82
Fine, large post	do	1.21
Special writing papers:		
New linen loan	Per pound	.32
Special grade	do	.16
Special grade, another variety	do	.16
Imitation handmade	do	.16
Special grade	do	.10
Drawing papers:		
Drawing, in webs, 60 inches wide	do	.24
Extra superfine quality	do	.24
Extra fine quality	do	.18
Tub-sized cartridge	do	.13
Tub-sized cartridge, 60-inch web	do	.13
Second tub-sized cartridge	do	.11
Tub sized, special variety	do	.09
Engine-sized cartridge	do	.12
Special, drawing finish	do	.06
Pure linen and other typewriting papers:		
Best quality pure linen—		
Manifold, cream laid—		
Letter size	Per ream	.73
Legal	do	1.03
Manifold, cream wove—		
Letter size	do	.73
Legal	do	1.03

List of prices—Continued.

Description.	Unit.	Value.
Pure linen and other typewriting papers—Continued.		
Best quality pure linen—Continued.		
Bank, cream laid—		
Letter size	Per ream	$0.91
Legal	do	1.46
Bank, cream wove—		
Letter size	do	.91
Legal	do	1.46
Bank, azure wove—		
Letter size	do	.91
Legal	do	1.46
Thick, cream laid, letter size	do	1.09
Thick, cream wove, letter size	do	1.09
Thick, azure wove, letter size	do	1.09
Extra thick, cream laid, letter size	do	1.39
Extra thick, cream wove, letter size	do	1.39
Extra strong—		
Bank, cream wove—		
Letter size	do	.54
Legal	do	.85
Bank, azure wove—		
Letter size	do	.54
Legal	do	.85
Thin, cream laid, letter size	do	.54
Thin, cream wove—		
Letter size	do	.54
Legal	do	.97
Thick, cream laid, letter size	do	.73
Thick, cream wove—		
Letter size	do	.73
Legal	do	1.15
Thick, azure wove, letter size	do	.73
Double thick—		
Cream laid, letter size	do	1.15
Cream wove, letter size	do	1.15
Bond—		
Thin, tough, white wove—		
Letter size	do	.60
Legal	do	.85
Thick, tough, white wove, letter size	do	.73
Linen manifold—		
Cream laid—		
Letter size	do	.54
Legal	do	.66
Cream wove—		
Letter size	do	.54
Legal	do	.66
Bank, cream wove—		
Letter size	do	.48
Legal	do	.60
Bank, azure wove—		
Letter size	do	.48
Legal	do	.60
Superfine mill finish—		
Thick, white wove, letter size	do	.54
Extra thick, white wove, letter size	do	.73
Mercantile bond bank—		
Cream wove—		
Letter size	do	.30
Legal	do	.36

List of prices—Continued.

Description.	Unit.	Value.
Pure linen and other typewriting papers—Continued.		
Mercantile bond bank—Continued.		
Azure wove—		
Letter size	Per ream	$0.30
Legal	do	.36
Thick, antique wove, letter size	do	.54
Extra thick, azure wove, letter size	do	.48
Superfine E. S., extra thick, cream laid—		
Letter size	do	.42
Legal	do	.54
Double thick, smooth white—		
Letter size	do	.60
Legal	do	.85
Tinted bond—		
Rose—		
Letter size	do	.91
Legal	do	1.21
Green—		
Letter size	do	.91
Legal	do	1.21
Buff—		
Letter size	do	.91
Legal	do	1.21
Best quality cream shade rag copying—		
Letter size	do	.48
Legal	do	.60
Very stout buff copying—		
Letter size	do	.79
Legal	do	.97
Illustration and label papers:		
Illustration, coated on both sides—		
18 by 23 inches, 28 pounds—		
1 ream and upwards	do	2.73
10 reams and upwards	do	2.49
18 by 23 inches, 35 pounds—		
1 ream and upwards	do	3.22
10 reams and upwards	do	2.98
23 by 36 inches, 56 pounds—		
1 ream and upwards	do	5.47
10 reams and upwards	do	4.99
23 by 36 inches, 70 pounds—		
1 ream and upwards	do	6.39
10 reams and upwards	do	5.84
23 by 36 inches, 80 pounds—		
1 ream and upwards	do	7.30
10 reams and upwards	do	6.69
20 by 30 inches, 42 pounds—		
1 ream and upwards	do	4.07
10 reams and upwards	do	3.77
20 by 30 inches, 60 pounds—		
1 ream and upwards	do	5.47
10 reams and upwards	do	4.99
20 by 25 inches, 50 pounds—		
1 ream and upwards	do	4.56
10 reams and upwards	do	4.19
20 by 40 inches, 100 pounds—		
1 ream and upwards	do	9.12
10 reams and upwards	do	8.39
Label, coated on one side only:		
20 by 30 inches, 30 pounds—		
1 ream and upwards	do	2.85
10 reams and upwards	do	2.61

List of prices—Continued.

Description.	Unit.	Value.
Label, coated on one side only—Continued.		
20 by 30 inches, 42 pounds—		
1 ream and upwards	Per ream	$3.58
10 reams and upwards	do	3.28
23 by 36 inches, 40 pounds—		
1 ream and upwards	do	3.77
10 reams and upwards	do	3.46
23 by 36 inches, 56 pounds—		
1 ream and upwards	do	4.74
10 reams and upwards	do	4.38
20 by 25 inches, 25 pounds—		
1 ream and upwards	do	2.37
10 reams and upwards	do	2.12
20 by 25 inches, 33 pounds—		
1 ream and upwards	do	2.76
10 reams and upwards	do	2.55
Art paper and boards for art printing:		
Tinted art—		
Large post, 30 pounds—		
1 ream and upwards	do	2.06
10 reams and upwards	do	1.94
Demy, 35 pounds—		
1 ream and upwards	do	2.43
10 reams and upwards	do	2.31
Double demy, 70 pounds—		
1 ream and upwards	do	4.87
10 reams and upwards	do	4.62
Double crown, 50 pounds—		
1 ream and upwards	do	3.46
10 reams and upwards	do	3.34
Tinted art 4-sheet boards (royal, 20 by 25 inches)—		
1 gross and upwards	Per gross	1.94
20 gross and upwards	do	1.82
White art	Per pound	1.06½
White art 4-sheet boards—		
1 gross and upwards	Per gross	1.82
20 gross and upwards	do	1.70
Music papers for manuscript	Per pound	.14
Copying papers	Per ream	$0.73 to 3.89
Pulp boards—		
Shell quality, white	Per gross	1.58 to 2.55
(12 cents per gross less in lots of 20 gross.)		
Machine chromo, white	do	1.82
Shell quality, tinted—		
3 sheets	do	1.58
4 sheets	do	2.12
6 sheets	do	2.67
(20-gross lots, 6 cents per gross less; 50-gross lots, 12 cents per gross less.)		
Antique artistic boards	do	2.79
20 gross and upwards	do	2.61
Fine quality tinted boards	do	.91
White printing papers:		
Superfine quality, highly finished	Per pound	.06
New esparto quality, pure white color	do	.05½
Glacé finish, printing:		
Fine printing	do	.05½
Fine supercalendered printing	do	.06½
Supercalendered printing	do	.05½
Another quality supercalendered printing	do	.04¾

List of prices—Continued.

Description.	Unit.	Value.
Tinted writings:		
Superfine shell	Per pound	$0.08
Shell quality, tub sized, tinted safety-check papers	do	.12
Esparto quality	do	.07
Tinted programme papers—		
Large post 18 and medium 18	Per ream	.73
Double medium 36	do	1.46
Double crown 27	do	1.09
Tinted printings for circulars, pamphlets, or memorandum forms	Per pound	.07
Colored printings for bill posters	do	.04
New pamphlet and music cover papers	do	.05½
Irish frieze embossing cover papers	do	.08
Tinted antique laid deckle-edge large post printing	do	.07
Laid cover papers	do	.07
Duplex pressings	do	.05
Tissues	Per ream	$0.48 to .68
New veneer pulp-tinted duplex—		
Printing papers	Per pound	.09
Cover papers	do	.09
4-sheet boards	Per gross	2.79
20 gross and upwards	do	2.61
Blotting papers:		
Superfine	Per ream	2.67 to 5.35
Fine	do	2.06
(Special price for quantities.)		
Newspapers	Per pound	.04 to .06
Reflex printing papers:		
Special finishing and sizing for dry printing, suitable for best class illustrated catalogues and all manner of block printing	do	.07½ to .10
Deckle-edged printing papers	do	.06 to .10
Lithographic printing paper (prepared by a proved process to avoid stretching in printing)	do	.07 to .18
Friction-glazed lithographic paper (for calendars, etc., burnished on one side and perfectly flat, made only to order)	do	.06½ to .09
Pasting lithographic paper (highly finished on one side by burnishing and plate glazing, rough back for pasting, made only to order)	do	.07
Machine chromo (used instead of coated chromo for cheap work, also for color lithographic printing)	do	.06½
Tinted special paper and boards (for artistic jobbing work and all kinds of process block printing):		
Duplex demy, 18 by 23—		
1 ream and upwards	Per ream	3.65
5 reams and upwards	do	3.52
10 reams and upwards	do	3.40
Double crown, 20 by 30—		
1 ream and upwards	do	5.47
10 reams and upwards	do	5.11
Artistic special, coated both sides alike:		
Demy, 18 by 23—		
1 ream and upwards	do	3.65
5 reams and upwards	do	3.52
10 reams and upwards	do	3.40
Double crown, 20 by 30—		
1 ream and upwards	do	5.47
10 reams and upwards	do	5.11
Special 4-sheet boards, coated both sides alike (royal, 20 by 25):		
1 gross and upwards	Per gross	2.79
20 gross and upwards	do	2.61
Duplex special 4-sheet boards (royal, 20 by 25):		
1 gross and upwards	do	2.79
20 gross and upwards	do	2.61
(Special quotations for quantities of 1 ton and over, one color, size, and weight.)		

List of prices—Continued.

Description.	Unit.	Value.
Memorandums and billheads:		
First style—		
Large post—		
Oblong, 8° memorandum	Per 1,000	$0.64
6° memorandum	do	.87
12° billhead	do	.44
Upright, 8° billhead	do	.64
Oblong, 8° billhead	do	.64
Oblong, 6° billhead	do	.87
Long, 6° billhead	do	.87
Upright, 4° billhead	do	1.29
Upright, 4° billhead, 3 pages	do	2.98
Upright, 8° billhead, 3 pages	do	1.50
Foolscap folio billhead	do	1.94
Second style—		
Large post—		
Oblong, 8° memorandum	do	.44
Oblong, 6° memorandum	do	.58
12° billhead	do	.30
Upright, 8° billhead	do	.44
Oblong, 8° billhead	do	.44
Oblong, 6° billhead	do	.58
Long, 6° billhead	do	.58
Upright, 4° billhead	do	.87
Upright, 4° billhead, 3 pages	do	1.98
Upright, 8° billhead, 3 pages	do	.99
Foolscap folio billhead	do	1.33

In the paper trade the terms of sale are one month, 5 per cent discount, free delivery.

There are no commission men or brokers in the paper trade in Edinburgh or Leith. The number of wholesale paper dealers (stationers) in the two cities is 52. The following is a list of the firms and companies in Edinburgh doing an exclusively wholesale trade:

J. Brown, Bridgeside Works, McDonald road.
W. Cuthbertson, 2 Picardy place.
James Dickson & Co., 10 South St. Andrew street.
Dobson, Molle & Co., 11 Elliot street.
Harvey & Co., 17 Forth street.
James Henderson, 19 Blair street.
Robert Hunter, 7 George street.
Robert James Hunter, 7 George street.
John A. McCulloch, 63 York place.
Marr, Downie & Co., 60 George street.
A. W. Norrie & Co., 27 Elder street.
James S. Pellow, 17 Forth street.
William Ritchie & Sons, 12, 14, and 16 Elder street.
Scott & Ferguson, 11 Queen street.
Smith & Ritchie, 71 Albert street.
Tullis & Co., Limited, 7 George street.
Waddie & Co., Limited, St. Stephen street.
Walker & Sinclair, Swinton road.
James M. Wilson, 17 Forth street.

EXPORTS.

The exports of paper at Leith in 1898 amounted to about 24,000 tons. This represents the bulk of the paper sent out of Scotland from the Edinburgh district. A comparatively small quantity goes to England by rail. All classes and grades of paper are exported, but a very large proportion is writing and printing of from medium quality to superfine. London is the great market, although the Lothian paper makers sell their product all over England and to some extent on the Continent. The paper for several London magazines and for some of the London book-printing and publishing houses comes from Edinburgh mills. Many London wholesale stationers and paper brokers or commission merchants handle extensively the writing and other kinds of paper produced here. A good deal of the so-called "Irish linen" put on the world's market from London is made in Scotland.

FREIGHT RATES.

The market prices I have given are also the prices free on board at Leith. The steamship rate to London on the better classes of paper in packages is $4.60 per ton, exclusive of cartage. The rate on coarser grades averages about $3.40. To Hamburg, the freight tariff on writings and the better grade printings is $4.20; coarser qualities of paper, $3. These are about the average rates also to Rotterdam, Amsterdam, Antwerp, Ghent, Calais, Bremen, and Copenhagen. The railroad rates from the mills to London on high-class papers are from $7.95 to $8.45 per ton. Only when quick delivery is necessary does any paper go by rail. It may be interesting and useful to note the cost to the mills of delivering paper in Edinburgh and on the docks at Leith. The schedule rate on paper in packages from Linlithgow to Edinburgh is $2.15 per ton, cartage at both ends included; and the charge is the same from Penicuik. But the large mills are granted a special rate of $1.60 per ton from Linlithgow to Edinburgh, including cartage at one end, and $1.45 per ton from Penicuik to Edinburgh, cartage at one end. From Penicuik to Leith docks the special rate (for ton lots, not less) is $1.08 per ton, exclusive of cartage; from Linlithgow, $1.24.

The dock rates at Leith on paper and materials are as follows: Paper, 16 cents per ton; esparto, 12 cents; leather boards, 36 cents; maps and charts, 30 cents; wood pulp, 16 cents; rags, 16 cents. These rates are per ton and are the same inward and outward.

It seems almost needless to refer to the telegraphic and postal facilities in the British islands and between the British islands and other parts of the world. They are known to be remarkably complete. As a matter of some interest, I append to this report a table showing the average number of days in transit of letters from Edinburgh, via the various ports of the United Kingdom, to all the countries in the world; also, a schedule of the regular sailings of steamships, for passengers and goods, from Leith to London and to the near-by continental ports.

IMPORTS.

All classes of paper are imported, chiefly printing and news and wrapping and lower grades. News print is a large item. The imports of paper of all kinds at Edinburgh in 1898 by water were about 16,000 tons, coming from the Continent, England, the United States, and Canada. How much was brought in by rail from other parts of the United Kingdom can not be estimated, but the quantity was comparatively small.

Germany has more of the import business than any other country. The German manufacturers have worked up the trade by the persistent efforts of their representatives in this market and by whittling prices. They have some advantage over American paper manufacturers in shipping rates, the rate on writings and printings from Hamburg being $4.20 per ton; on coarse grades of paper (wrappings), $3; and on news, about $3.20.

OUTLOOK FOR AMERICAN TRADE.

Whether there are openings in this market for the extension of the sale of American paper, pulp, and articles made from paper is essentially, though not altogether, a question of competition in prices. American typewriting paper is used very generally, because it is better adapted to the purpose than any other typewriting paper. It was introduced with the typewriter from the United States and has continued in favor to a great extent, notably in the stenographic and copying offices where many typists are employed. American news print has been used by a newspaper-publishing company in Edinburgh. It has been handled in Scotland by one of the leading paper companies. The manager informs me that the foreign trade seems to have been dropped by the American manufacturers at the outbreak of the war with Spain, on account of the immense home demand. This gentleman, who is a patriotic Scotsman, says that American news print can compete in quality and price with the English and German news, but that our paper makers "can not compete in price with the Scotch on their native heath in writings and printings." The fact stands out, however, that German printings and writings have gained a considerable market in the east of Scotland. If these classes of American paper, or any other classes, can be delivered here at the prices of the same kinds of Scotch-made and German-made paper, it is quite certain that if equal in quality they will be preferred to the German.

It has been said that "price demonstrates itself, but quality and adaptability must be demonstrated." In this country, no other plan of working up business is at all comparable to the plan of having a trained, intelligent, and alert man always on the spot or at least in touch with the trade.

The greatest printing and publishing firm in Edinburgh has American presses, American folders, and American stereotyping machinery. It is almost needless to add that this firm will not hesitate to substitute American for Scotch paper whenever a specially attractive price for a good article or a moderate price for a specially attractive article may be named. The same statement applies to most consumers of or dealers in paper. In this market, no sentimental objection to American manufacturers is met with. The question of increasing trade resides primarily in the comparative practical utility of the product offered and secondarily in the ability to win the market, which is rarely accomplished in any community without the aid of an expert in the business.

RUFUS FLEMING,
Consul.

EDINBURGH, *March 8, 1899.*

APPENDIX.

Average time in transit of letters from Edinburgh.

[Compiled from the Edinburgh Post-Office Guide.]

Country.	Days.	Country.	Days.
Africa (west and Portuguese coasts)	13 to 30	Ecuador	28
Antigua	15	Egypt	7
Argentine Republic	23 to 25	Falkland Islands	31
Asuncion	31	Faroe Islands	3
Australia	34 to 40	Fiji Islands	30 to 42
Austria	2	France	1
Bahamas	11	Germany	1½
Barbados	13	Gibraltar	4
Belgium	1	Greece	5
Bermudas	15	Guadeloupe	15
Bolivia	35 to 42	Guatemala	23
Brazil	14 to 17	Haiti	15
British East Africa	22	Holland	1
British Central Africa	40 to 92	Honduras (British)	17
Buenos Ayres	23	Hongkong	29
Canada	9	Iceland	9
Canary (Grand)	6	India	15 to 19
Cape Colony	20	Italy	2
Cape Verde Islands	11	Jamaica	17
Carthagena	24	Japan	33 to 40
Ceylon	16	Java	28
Chile	40	Madagascar	25
China	31 to 40	Madeira	5
Colon	20	Malta	5
Colombia	20	Martinique	15
Kongo	27	Mashonaland	28
Constantinople	4	Mauritius	26
Costa Rica	16	Mexico	15
Cuba	12	Montevideo	22
Cyprus	10	Natal	23
Denmark	2	New Brunswick	9

Average time in transit of letters from Edinburgh—Continued.

Country.	Days.	Country.	Days.
Newfoundland	9	Sierra Leone	15
New South Wales	34 to 40	Singapore	24
New Zealand	33 to 36	Spain	2
Niger coast	28	Sweden	3
Norway	3	Switzerland	2
Nova Scotia	9	Syria	7
Panama	20	Tasmania	35
Peru	30	Teneriffe	7
Philippines	33	Transvaal	22
Puerto Rico	16	Trinidad	14
Portugal	4	Turks Island	17
Queensland	35 to 40	United States	8
Russia	3	Uruguay	22
St. Helena	18	Venezuela	20
St. Thomas	17	Victoria	32
Savanilla	23	Zanzibar	23
Senegal	13		

Sailings from Leith.

For London, every Tuesday, Wednesday, and Saturday.
For Rotterdam, every Tuesday and Friday.
For Amsterdam, every Monday.
For Harlingen, every Tuesday.
For Antwerp, every Tuesday and Friday.
For Ghent, every Saturday.
For Dunkirk, every Thursday.
For Calais, every Tuesday.
For Hamburg, every Wednesday and Saturday.
For Bremen, every Friday.
For Copenhagen, every Thursday.
For Christiansand, every Thursday.
For Stettin, every Wednesday.

Besides these fixtures, there are steamships and sailing vessels constantly plying between this coast and the ports named and a hundred other places more distant.

Books and periodicals on paper making.

[List furnished by William Brown, bookseller and publisher, 26 Princes street, Edinburgh.]

Name.	Price.	
	s. *d.*	
The Paper Makers' Circular, monthly	0 6	$0.12
The Paper Makers' Directory of all Nations, containing every paper and pulp mill in the world, cloth gilt	10 6	2.55
The Art of Paper Making, by Alexander Watt, illustrated, cloth	7 6	1.82
Practical Paper Making, by G. Clapperton, illustrated, cloth	5 0	1.21
A Treatise on Paper for Printers and Stationers, by Richard Parkinson, cloth	3 6	.85
The Manufacture of Paper, by C. T. Davis, 180 illustrations, 8°, cloth	28 0	6.81
Treatise on Paper Making, by C. Hofman, with plates and engravings, 20 parts, paper covers, net price, each part	5 0	1.21
The Practical Paper Maker, by James Dunbar, 18°, cloth	3 0	.73
Bamboo, Considered as a Paper Making Material, by Thomas Routledge, 8°, sewed	2 0	.48
A Text Book of Paper Making, by C. F. Cross and E. J. Bevan, with engravings, new edition, cloth, about	12 6	3.04
Paper Mills Directory (British) and Year Book of Paper Making Trade, annual	2 6	.60

LIVERPOOL.

Replying to circular from the Department, I have to say:

Although I have made energetic efforts to secure information, I am not able to send any replies to the questions propounded that would be of practical value. There are no paper mills in the Liverpool consular district, and this is not a center of the paper trade. I feel it proper to say, also, that I found a manifest indisposition on the part of paper dealers to give me the information asked for. Failing in all efforts here to procure any information, I wrote to the editors of the Paper Makers' Monthly Journal and of the Directory of Paper Makers at London, but I have just received a reply regretting that the editor was not able to assist me in the matter.

JAMES BOYLE,
Consul.

LIVERPOOL, *January 24, 1899.*

MANCHESTER.

The total population, according to the census of 1891, is 505,343; present population, 546,010. The people have mechanical traits so as to become producers of paper.

There are 97 paper merchants and dealers, 31 paper makers, and 28 paper-hanging manufacturers and dealers. The principal ones are:

Paper merchants and dealers.

J. Brownhill & Co., 66 and 68 Thomas street, Manchester.
Ockleston & Fritzgerald, 45 a Faulkner street, Manchester.
H. & L. Slater, Limited, 12 Dantzic street, Manchester.
J. Spicer & Sons, 20 Mount street, Manchester.

Paper makers.

Almond Brothers, 63 a Corporation street, Manchester.
J. R. Crompton & Bros., Limited, Elton Paper Mills, Bury, Lancashire.
Felber, Jucker & Co., 60 Peter street, Manchester.
R. Fletcher & Son, Limited, Stoneclough, near Manchester.
Olive Brothers, Limited, Woolfold Mills, Bury, Lancashire.
Olive & Partington, Glossop, near Manchester.
J. Wrigley & Son, Limited, 29 John Dalton street, Manchester.

Paper-hanging manufacturers and dealers.

Lightbown, Aspinall & Co., Limited, Hayfield Mills, Pendleton, Manchester.

Pegamoid, Limited, 6 Tib street, Manchester.

Wylie & Lockhead, Limited, 5 Portland street, Manchester.

C. & J. G. Potter, Darwen, Lancashire.

There are 30 publications, 293 printers, 67 publishers, 27 paper-bag makers, and 33 paper-box makers.

The consumption of paper in this district is rapidly increasing. This is borne out by the introduction of new wide machines in English mills, and also by increased importations. Germany sends more imports than any other foreign country.

PRODUCTION.

Very little water power is used in this country. Wood pulp, esparto, and rags are used for paper making.

There is but one large firm making paper machinery in this district, viz, Bentley & Jackson, Limited, Lodge Bank Works, Bury, Lancashire. It makes all kinds of machinery of this class, one of the chief being a rag-cutting machine.

The paper is both machine and hand made. The processes and methods of manufacture are modern.

IMPORTS AND EXPORTS.

As to the classes of paper imported, that for newspapers is chiefly in demand. This is due to the fact that such countries as the United States and Scandinavia have natural resources for the production of wood pulp, turning it into paper of the kind suitable for newspaper printing.

Very little paper is sent to foreign countries, the bulk of the trade being with British colonies—for instance, Australia, South Africa, and British Indies.

William F. Grinnell,
Consul.

Manchester, *April 15, 1899.*

SHEFFIELD.

POPULATION.

The total population of the city of Sheffield, according to the last census, taken in 1891, was 324,243, and its present estimated population is 361,815. The percentage of illiterate persons is not known. The number of illiterate voters at the election of a school board in 1894 was 261, or less than 1 per cent. The people have mechanical traits, and paper is produced.

CONSUMPTION.

The uses of paper are many. There are large cutlery industries in the district which use a specially glazed paper for wrapping purposes, similar to a high-glazed manila. It is manufactured here. Letter paper, note, foolscap, demy, account, brown, and rolls for press news are also much used. The requirements as to quality, weights, and sizes are ordinary. Good prices—varying from 4 to 8 cents per pound—are paid by the cutlery manufacturers for the glazed paper above named.

There are 2 paper-making firms in the district, one engaged in the manufacture of paper for wrapping purposes and the other for news. There are also about 130 stationers in the city. The names and addresses of the paper-making firms are:

Peter Dixon & Sons, Oughtibridge, near Sheffield.
Charles Marsden & Sons, Holly street, Sheffield.

The leading stationers are:

Dawson & Brailsford, High street, Sheffield.
Jeremiah Robertshaw, Hartshead, Sheffield.
Loxley Brothers, Fargate, Sheffield.

A quantity of paper is obtained from Scotch houses and London firms. There are 2 daily papers, 1 evening paper, and 5 others published in Sheffield, and these, together with directories, a medical journal, and two railway guides, practically embrace the whole of the local publications. The total number of printers is about 99, and of publishers 8. The consumption of paper is increasing and is likely to continue.

PRODUCTION.

There is much undeveloped water power in this district, conveniently located as regards railways, navigable water ways, markets, and sources of material for paper. Fuel exists in abundance, and coalpits are found in the whole district. Manufacturers can buy fuel for 91 cents per ton and upwards, delivered in their factories. There are no raw materials in the district except rags, and these are poor and dirty. Rags suitable for making white paper are bought for about $17.02 per ton, and brown and glazed at $12.16 per ton and upwards. The greater part of the paper-making machinery in the district is made in Lancashire and Scotland. Labor is well paid and is efficient, a skilled machine man getting from 18 to 24 cents per hour and common labor about $5.83 per week. The number of paper mills is 3, and their output, taken on an average for the last three years, will be about 5,000 tons per annum. The power used is steam. The paper is entirely machine made, and some of the best machinery in the country is used in the district and has been mostly brought up to date. Methods are improving and the production increasing so as to more than meet the growing demand.

IMPORTS.

There is very little paper imported into the district. A year or two ago, Norway and the United States competed and obtained some hold on the market, and the competition had the result of depressing prices; but practically no foreign paper has been sold during the last twelve months, except some thin caps, which are largely imported from Scandinavia. The market price for paper for newspaper printing is about $48.66 per ton, delivered, and for caps $48.66 to $77.86 per ton. The banking, mail, and telegraphic facilities are very good. There are no import duties or tariffs on these imports. The Scandinavians have been making strenuous efforts to build up their exports to this district. Consumers are constantly visited by agents of Scandinavian and of United States paper manufacturers, but local competition seems to be too great for them to get a footing here for their manufactures. The only way to do so would be by underselling the makers and supplying manufactures of equal or better quality. The establishment of a local exhibition or museum for American manufactures is suggested as the best means to increase and build up the export trade of the United States to this district.

Local statistics as to imports can not be given. The following, taken from the Paper Maker and British Paper Trade Journal, edited in London and dated January 31, 1899, gives the Board of Trade returns of total imports of paper and paper-making materials into the United Kingdom for the years 1896, 1897, and 1898:

Description.	Quantity.		
	1896.	1897.	1898.
Writing and unprinted papers:	*Cwts.*	*Cwts.*	*Cwts.*
Sweden	498,278	491,201	540,586
Germany	513,101	480,405	358,679
Holland	575,475	499,127	446,484
Belgium	266,642	227,872	233,998
Other countries	717,881	1,287,055	1,341,935
Total	2,571,377	2,985,660	2,921,682
Printed papers:			
Germany	14,732	9,545	14,216
Holland	14,608	17,656	15,728
Belgium	34,643	42,254	31,126
France	8,325	10,675	9,933
Other countries	13,458	19,818	23,877
Total	85,766	99,948	94,880
Straw boards, millboards, and wood-pulp boards	1,383,749	1,759,413	1,995,693
Total imports of paper and boards	4,040,892	4,845,021	5,012,255

Description.	Quantity.		
	1896.	1897.	1898.
	Tons.	*Tons.*	*Tons.*
Linen and cotton rags	21,055	25,333	20,559
Esparto and other vegetable fibers:			
Spain	67,715	61,828	55,612
Algeria	70,251	81,486	83,701
Other countries	49,312	61,265	58,028
Total	187,278	204,579	197,341
Wood pulp:			
Chemical* —			
Norway	......	......	91,165
Other countries	......	......	88,345
Total	......	......	179,510
Mechanical *—			
Norway	......	......	141,455
Other countries	......	......	83,862
Total	......	......	225,317
Total of wood pulp:			
Norway	205,677	239,133	232,620
Other countries	121,403	149,171	172,207
Total	327,080	388,304	404,827

*Not registered separately prior to 1898.

EXPORTS.

There is no paper exported from this district, so far as can be ascertained.

SCHEDULE FOR TRANSPORTATION.

For Class A (articles used in the manufacture of paper) the rates charged are:

(1) Rags—from Hull, on the east coast, $2.03 per ton; from Liverpool, on the west coast, $2.47.

(2) Wood for pulp—from Hull, $1.62 per ton; from Liverpool, $2.23.

(3) Ground wood—from Hull, $1.62 per ton; from Liverpool, $2.23.

(4) Chemical fiber—from Hull, $2.03 per ton; from Liverpool, $2.55.

(5) Other fibers—from Hull, $2.03 per ton; from Liverpool, $2.55.

All not less than 2-ton lots; no difference made for train loads or ship cargoes.

For Class B (products of paper mills) the charges are:

(1) Printing paper for newspapers—Hull, 51 miles, $3.24 per ton; Liverpool, 72 miles, $4.26 per ton; Manchester, 40 miles, $2.84 per ton.

(2) Wrapping or other grades of paper, same as above.

JAMES JOHNSTON,
Consul.

SHEFFIELD, *February 24, 1899.*

TUNSTALL.

The total population of the district is about 250,000. There are no statistics available as to the number of illiterates. The people have not much mechanical ambition.

This is not a paper-making district. It is the greatest pottery-manufacturing center in the world, and most of the paper made is for use in the potteries, either for printing patterns upon the ware or for packing the finer goods.

Practically, only the necessities of life are bought and sold in the boroughs which go to make up the "potteries." Everything else must be ordered from the larger centers. Even daily newspapers come from elsewhere, with the exception of one small sheet published at Hanley.

I find but three mills among the towns of my district, all of which make principally paper for pottery use. There are no statistics giving product or amount of wages paid. As all the paper is machine made, the amount produced being roughly measured by the number of machines. Two of the mills have two machines each, the third but one.

The quantity of the paper manufactured is not liable to increase. There is no undeveloped water power. The district is well supplied with railways and canals for transportation. Water power is used only for small feed mills. Coal is the fuel employed. Beds of it underlie most of the district, and it is hauled by cart to the factories. There is no raw material in the district available for the manufacture of paper. But little wood pulp is used. Most of the paper is made from vegetable fiber, such as hemp.

The mills of my district were warned from the office of the Paper Manufacturers' Association, in London, when the circular of the Department was issued, to give no information to the Americans as to details of manufacture of paper, price of labor, etc. The companies therefore decline to talk on the matter. Their main output is a white tissue paper, used for transferring designs to pottery. The designs are engraved on metal. The paper is wet with size and pressed upon the plate, in much the same manner as an engraved visiting card is printed. Before the oil color is dry, the paper on which the design is printed is pressed by hand onto the dish to be decorated. The paper must be supple and tough enough to allow of being pressed into all inequalities of the form of the dish, so that the pattern may be continuous, but at the same time so thin and soluble that it can be washed off from the dish a few moments after its application, leaving the pattern on the china or earthen ware.

It is comparatively easy to do work with one color; but when there are several colors in a pattern and the paper must be applied to several stones or blocks, one for each color, as in lithography, there is difficulty in making it "register" correctly. The thin papers have a tendency to expand and contract irregularly each time they are moistened and dried. This, of course, leaves a blurred impression on the paper. To obviate this, one mill has invented a paper composed of three layers or folds, which has been applied to as many as twenty stones with satisfactory results. The tissue, with a layer of dry size, is gummed to a strong backing, the gum being of such consistency as to hold the two together during the printing and to allow the tissue with its complete pattern to be stripped from the backing and applied to the pottery as if it had but one color.

The following table shows the declared price per ream of unsized printing papers shipped from the Tunstall consular district to the United States during the year 1898:

Description of paper.	Size.	Price per ream.		
	Inches.	*s. d.*	*s. d.*	
Imperial	28 by 28		5 3	$1.28
Do	17 by 20	2 3 to	2 5	$0.55 to .59
Do	16 by 28		3 0	.72
Do	16 by 32		3 5	.83
Do	30 by 32		6 5	1.56
Do	32 by 36		6 5	1.56
Double crown	20 by 20	4 0 to	4 6	.97 to 1.09
Do	15 by 30		3 0	.73
Do	16 by 24		2 7	.63
Do	16 by 26		2 10	.69
Do	16 by 30		3 3	.79
Do	16 by 32		3 6	.85
Do	18 by 18		2 2	.53
Do	18 by 32	3 6 to	3 10	.85 to .93
Do	24 by 36		5 9	1.40
Do	28 by 32		6 0	1.46
Goliah	26 by 30		5 3	1.28
Elephant	22½ by 29½		4 6	1.09
Large twiffler	20 by 20		2 9	.67
Extra twiffler	21 by 21		3 6	.85
Specially prepared duplex lithographic transfer paper, 480 sheets to ream	20 by 26		32 7	7.93

The total exports of paper from this district to the United States for the year 1898 amounted to $7,568.88.

Our manufactured articles should be introduced here by the same means that would be adopted at home. Bright salesmen must spend time and money to teach the people that they want the goods. The pottery trade, notwithstanding the fact that there are agencies in the United States, send over every year an army of salesmen, who go as far as San Francisco, and seem to make profitable trips.

WM. HARRISON BRADLEY,
Consul.

TUNSTALL, *June 6, 1899.*

NORTH AMERICA.

DOMINION OF CANADA.

CHARLOTTETOWN.

POPULATION.

The total population of the Province of Prince Edward Island is 110,000; total number of illiterates, 27,126, including 19,136 children under 10 years of age.

CONSUMPTION.

The uses of paper are for printing, bookbinding, and stationery. There are no industries peculiar to the country requiring paper. All classes and kinds of paper are used, as well as all qualities, weights, sizes, etc. The market price for printing paper is from 2½ to 3 cents per pound: other paper, from 4 to 30 cents.

George Carter & Co. and Harzard & Moore, of Charlottetown, are the largest dealers in this Province.

There are about 20 publications. The number of printers is 12, with staff of operators; number of publishers, 8. There are no articles manufactured from paper or pulp on this island.

IMPORTS.

With the exception of wall paper, there is very little imported. I am confident $1,000 would cover other importations. Most of the paper comes from Montreal and Hull. I am informed that printing paper from the United States costs from one-fourth to one-half a cent more per pound than Canadian goods; this is in a measure owing to duties.

The duty on newspaper stock is 25 per cent; writing-paper, ruled, 35 per cent; unruled, 25 per cent.

Banking, mail, and telegraph facilities are good. If our manufacturers would send their agents and introduce their goods more widely, there is no reason why our trade in this line should not be greatly increased, as American goods of all classes are held in high esteem by the people. Another way to help our trade would be for the consuls to be allowed to have a room and make exhibits of American manufactures, as in that way dealers would see many things which might not otherwise be brought to their attention.

EXPORTS.

There are no paper or pulp manufactories in this Province, wood not being found in sufficient quantities; consequently, there are no exports.

DELMAR J. VAIL,
Consul.

CHARLOTTETOWN, *December 12, 1898.*

FORT ERIE.

In this consular district, there is nothing which would be of the least interest to the paper manufacturer. There are no cities or large towns, no paper mills, and no special consumption of paper other than for the daily needs of the people; nothing, in fact, that I can report which would be of any value to the United States.

OSSIAN BEDELL,
Consul.

FORT ERIE, *January 4, 1899.*

OTTAWA.

The paper trade in this district is similar in many respects to that of the United States, as the uses of paper, the industries peculiar to the country, the classes and kinds of paper, the quality, weights, sizes, etc., are the same.

The market prices of these papers are nearly identical with those of the United States; in some instances, slightly higher. The regular terms of sale by the paper manufacturers are 3 per cent thirty days or net ninety days.

PRODUCTION.

There are at the present time in the Provinces of Ontario and Quebec 53 pulp and paper mills. The largest paper mill in operation is that of the E. B. Eddy Company, of Hull, Quebec. This company has at the present time 8 mills in operation, using eight beating, four 900 pounds, twenty-eight 1,000 pounds, twelve Jordan engines, one 76 and 86 inch Harper, two 96 and one 112 inch Fourdrinier, 86-inch six cylinder; width of supercalenders, 80 inches.

These mills manufacture book, news, tissue, ledger, manila, wrapping, writing, paper bags, indurated fiber ware, and wood-pulp board, and have a capacity of 132,000 pounds every twenty-four hours. They manufacture antiseptic fruit and fish package papers and the indurated fiber ware from pulp.

The next largest mill is the Laurentide Pulp Company, of Grand Mere, Quebec, with a capacity in news paper of 80,000 pounds and in wood-pulp board of 60,000 pounds every twenty-four hours.

The consumption of pulp is likely to increase very materially. The growth within the last six months has been remarkable. The nationality dominating the paper trade is Canadian, but there is much British and United States capital coming in at present.

The undeveloped water power is of such immense volume that it is beyond estimation and will probably never be entirely used. The developed water power in the paper mills in Hull at the present time amounts to about 8,500 horsepower, and they also use a very large steam plant. The Ottawa and St. Lawrence rivers and the Rideau Canal to Kingston and the Great Lakes serve as navigable water ways. Shipments can be made direct from the mills in Ottawa and Hull in eleven directions by rail.

The number of trees for pulp is practically unlimited. Rags and waste material are well saved in Canada and are used in large quantities.

The cost of labor in paper mills is from 90 cents per day upwards. The efficiency of the labor seems to be slightly less than in the United States. The methods of manufacture are modern, and the very latest machinery is used. As nearly all the paper mills are increasing their output, both of paper and pulp, the production seems likely to be largely increased.

IMPORTS AND EXPORTS.

Imported paper seems to consist of finer grades only and comes from Great Britain and the United States.

The banking facilities and financial connections are excellent.

The tariff on each class is as per schedule below:

	Per cent.
Millboard, not strawboard	10
Strawboard in sheets or rolls	25
Paper sacks or bags of all kinds	25
Printing paper and paper of all kinds not elsewhere specified	25
Papeteries, boxed papers, envelopes, and all manufactures of paper not elsewhere specified	35

Other countries seem to be doing comparatively little to build up their exports in this section of paper and pulp, but there appears to be a good opening for the finer grades of American paper.

Exports consist almost entirely of news paper. The price at point of shipment is about $2 per 100 pounds, and the goods are mostly sent to Great Britain.

The schedules for transportation are: Rags. 15 to 18 cents; wood for pulp, $1.25 to $1.50 per cord; ground wood, chemical fibers, and other fibers, about 15 cents.

There are at the present time practically no idle paper or pulp mills in Canada, there being only one in Ontario and two in the Province of Quebec, all very small.

CHARLES E. TURNER,
Consul-General.

OTTAWA, *December 14, 1898.*

SUPPLEMENTARY.

Since answering the Department circular of November 16, there has come under my notice a report by Mr. Andrew Holland. Mr. Holland has made the following summary, based upon the opinions of engineers and others, of the water power about Ottawa within a 45-mile limit. He has not included the small water power—from 10 to 15 horsepower—that can be found on almost every creek.

	Horsepower.
Ottawa River	664,000
Tributaries, south shore:	
Rideau River	1,300
Mississippi River	14,700
Madawaska River	20,700
Bonnechere River	2,400
Tributaries, north shore:	
Petite Nation	2,000
Blanche River	2,000
Lievres River	98,450
Little Blanche	300
Quyon River	100
Coulonge River	27,600
Black River	24,000
Gatineau River	31,675
Total	890,225

CHARLES E. TURNER,
Consul-General.

OTTAWA, *February 1, 1899.*

QUEBEC.

The population of the city of Quebec was, at the census of 1890, 63,000; and it is now estimated by the mayor to be 73,000, which I think is correct.

As regards illiterates, I can not find any statistics; but I know the schools are good and numerous. The children are compelled to learn to read and write, and the illiterate immigration from the Old

World has mostly passed beyond here during the past twenty-five years. As the people are intelligent, they certainly have mechanical traits and are able to become producers of paper.

CONSUMPTION.

Paper is used for the same purposes as in the United States; I do not know of any industries peculiar to the country requiring paper.

The paper employed is chiefly for printing newspapers, of which there are 7 daily, 5 weekly, and 3 monthly; for writing, wrapping, etc. The market price is: For news paper, 2 to 2½ cents per pound; fine book, 10, 15, and 20 cents per pound; writing, 6, 10, 12, and 15 cents per pound; wrapping paper and bags are very cheap.

I have no means of giving the quantities and value of paper consumed in the country. The publications are:

Daily newspapers.—Le Courrier du Canada, Le Soleil, Le Quotidien, L'Evenement, the Daily Mercury, the Morning Chronicle, the Daily Telegraph.

Weekly newspapers.—La Semaine Commerciale, La Verite, Le Journal des Campagnes, Le Soleil, Saturday Budget.

Monthly.—Educational Record, La Croix, Le Courrier du Livre.

Periodicals.—Les Annales de St. Ann, L'Enseignement Primaire.

The articles manufactured from paper are books, bags, and boxes.

PRODUCTION.

Most of the fine book and writing paper is manufactured at St. Jerome, Quebec. The news paper used in this city is chiefly manufactured at Hull, Quebec. Paper bags are made here for the local trade from paper manufactured at Lorette and Portneuf, Quebec, where most of the wrapping paper is produced. The principal dealers are:

J. B. Rolland & Fils, 76 St. Paul street.
Reid, Craig & Co., 126 St. Andre street.
Quebec Paper Bag Company, 74 Renaud avenue.

J. B. Rolland & Fils do most of the fine book and writing paper business.

The total number of printers is 22; most of them are publishers.

The paper business is mostly done by Canadians. There is in the Province of Quebec a vast amount of water power to be had at a nominal price and situated not far from navigable waters and railroads. There is plenty of wood and coal fuel at a low price. As to raw material, not many rags, and, so far as I know, no grasses have been used. The cost of material to the manufacturers must be as low as in any place in the world, considering the low price of timber land ($1 per acre), the fine water powers, and the cheap transportation. I think most of the modern machinery for making paper is imported from the United States, but there are plenty of facilities for making it here.

The cost of labor in paper and pulp mills is from 80 cents to $3 per day, and no better or more efficient workmen can be found. I can not give quantities or value of output for the past five years without considerable expense.

There are only 2 small paper mills in this vicinity. The power is water and the methods old fashioned, though I think modern appliances will soon be used. There are 3 mills at Portneuf, Quebec, making felt, wrapping, and printing paper. The mill at Lorette, in addition to wrapping, also makes felt and printing paper. A small mill at St. Bazille makes felt and building paper. The largest paper and pulp mill in this vicinity is at Grand Mere, located on the west side of the St. Maurice River, on the Great Northern Railway. More than $2,000,000 have been invested by Canadians and Americans, and nearly 1,000 hands are employed. About 40 tons of printing paper are made daily. The name is the Laurentide Pulp and Paper Company. It also produces daily about 100 tons of dry pulp, 35 tons of cardboard, and 50 tons of sulphide pulp. There is also a pulp mill at Chicoutimi doing a large business. I am unable to give the amount, as the manager has failed to answer my letter asking for information. There are pulp mills at St. Raymond, Pont Rouge, Portneuf, and Old Lake Road, with a production of about 5 tons daily each.

IMPORTS AND EXPORTS.

The imports of books, printed matter, printed music, and paper of all kinds in 1897 were $31,907, of which the United States furnished to the value of $22,214; Great Britain, $2,929; France, $6,956; and Germany, $756. The export tables for 1897 do not show any paper; but wood pulp was valued at $32,918, against $40 in 1896. My consular certificates for 1898 show $24,359 worth of pulp wood exported to the United States.

The banking, telegraph, and mail facilities with various countries are good.

Books will continue to be imported from the United States; but it is my opinion that Canada will export paper, wood pulp, and pulp wood to the United States for a good many years to come, for the reason that there is an unlimited supply of cheap timber.

The means of transportation are railroads, steamboats, and canal boats towed by steam tugs. Rates, as nearly as I can learn, are about the same as in the United States for the same service. The English and Canadians, as a rule, control the lines of transportation.

WM. W. HENRY,
Consul.

QUEBEC, *December 31, 1898.*

ST. JOHN'S (NEWFOUNDLAND).*

The estimated population of the colony of Newfoundland is 200,000. St. John's, the capital, has a population of about 30,000 and is headquarters for all imports and exports.

There are no paper or pulp manufacturers in the colony. The erection of mills is under consideration. There is an immense area of country covered with spruce suitable for the manufacture of pulp. Fir is also abundant and has been found to make good pulp. It does not contain as much turpentine as the fir timber of Canada and the United States. The spruce and fir can be found all over the island. On the west coast, there are large quantities of poplar, also suitable for the manufacture of pulp. There is an abundance of pure water all over the island, and pulp mills will have no trouble in securing all the water power they require.

The population of Newfoundland being small, but a limited quantity of paper is used. All the paper imported into the colony comes from England, Canada, and the United States. The only kinds are printers' paper, news paper, writing paper, stationery, wall paper, manila and brown wrapping paper, and paper bags used in mercantile houses.

All paper used in printing offices is imported from Canada and the United States, costing 3 cents per pound in either country. Manila paper is nearly all purchased in Canada; the grade used here costs 3½ cents per pound. Brown wrapping paper costs 2 to 2½ cents per pound. Nearly all the wall paper comes from England. The grade sold here is in 12-yard lengths, costing from 2 to 5 cents, and is mostly sold without border. Only the higher grades are bought in the United States, where a greater variety and more attractive patterns can be had. There is, however, but little demand for high-grade wall paper.

There are 3 daily and 2 weekly newspapers published in St. John's. There are 5 job-printing offices. In the outports, 5 weekly newspapers are published. Writing paper sold in this market is mostly in cheap grades; there is very little demand for handmade paper.

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* Newfoundland, although not in the Dominion of Canada, is placed here for convenience of record.

The following table shows the imports of the different kinds of paper from each country supplying this market for the fiscal year ended June 30, 1898, wrapping paper being included with stationery:

Whence imported.	Stationery.	Wall paper.	Paper bags.	Books, printed.
United Kingdom	$17,588	$12,786	$642	$14,149
Canada	5,442	146	235	2,056
United States	2,420	367	656	3,640
Total	25,450	13,299	1,433	19,836

The grand total was $60,018.

There are no direct taxes in Newfoundland. The duties are partly ad valorem and partly specific, but only to a slight extent differential, the tariff being designed for revenue purposes only, and not for protection. There is no preferential duty in favor of any country.

Duties on the different kinds of paper are:

	Per cent.
Stationery	30
Account books	35
Wrapping paper	30
Wall paper	30
Paper bags, not printed	35
Paper bags, printed, and all other printed matter	50
Printing paper for newspapers and job printers	Free.
Books for institutes and religious purposes	Free.
All articles for the governor's use and foreign consuls' supplies for official use	Free.

The imports of paper from the United States to this district should be larger, and, I am satisfied, if our paper manufacturers would pursue the same course as English and Canadian houses and send representatives here, they would have little trouble in securing most of the paper trade. With direct shipment from New York and Boston, freight rates and terms of sale being about the same as those of England and Canada, and there being no preferential duty, I see nothing to prevent the increase of imports of paper from the United States.

MARTIN J. CARTER,
Consul.

ST. JOHN'S, *March 16, 1899.*

SYDNEY.

There are no manufacturers of paper in this consular district.

The population of Sydney is approximately 3,500. I have no means of obtaining data as to illiterates, but am of opinion that the number is small, as there is a good system of public schools in this community.

The greater proportion of the population is engaged in three industries, viz, agriculture, mining, and fishing.

CONSUMPTION.

The paper employed here is almost entirely for the purposes of correspondence, printing of newspapers, and the uses of mercantile houses. There are no industries peculiar to the country requiring paper in large quantities. Writing, news, and wrapping paper are the kinds used almost exclusively. There are no special requirements as to quality, size, weight, etc.

I am unable to state market prices, as the sales are made wholly by agents and vary from time to time according to market value. The terms of sale are the usual commercial rates of three months, with discount for cash.

There are no statistics available from which to obtain the quantity or value of paper consumed. There are no paper firms, companies, or brokers resident here, each party using paper purchased from commercial agents on their visits.

There are published in this town 1 daily and 4 weekly papers of small circulation. The total number of printers employed is about 25. There are no publishers outside of those of the papers named.

No articles are manufactured from paper or pulp in this consular district. There is no present indication of any increase in the use of paper in this section.

The Dominion of Canada dominates the paper trade here. An occasional small order for wall paper is sent to the United States.

The water power on this island is very small, there being no large rivers or falls. Fuel in this section consists of wood and bituminous coal, the latter being more generally used. Slack or culm coal is sold at this port at from 90 cents to $1.20 per ton; run-of-mine coal, at from $1.40 to $1.80 per ton. Transportation facilities to this port from the mines are good, either by water or rail. In more remote sections, water transportation is the cheapest and best, except on the direct line of the railway to Point Tupper.

The raw material—*i. e.*, timber—is quite abundant in certain sections of the island, especially the northern portion. It consists principally of spruce of a medium-sized growth, rarely running over 18 inches in diameter at the base. Vegetable fibers, grasses, rags, or waste materials are of such a limited quantity as not to be taken into account.

There are no facilities here for making paper machinery.

IMPORTS.

At present, there appears to be but little opening for the introduction of articles manufactured from paper from the United States, on account of the tariff. Upper Canada controls this market, having both rail and water communication.

The only course, in my judgment, by which the United States merchants can open up exportation of articles manufactured from paper into this section of country would be by sending representatives with full and complete samples of their goods and offering inducements in the way of low prices, good style and quality of wares, and the same terms as to time on accounts and discounts as their competitors.

SCHEDULE FOR TRANSPORTATION.

The Intercolonial Railway, owned by the Dominion Government, has a line from this port to Halifax, St. John, New Brunswick, and Montreal. There are also regular lines of steamers running from Boston, Mass., to Halifax, one of which touches at Port Hawksbury, in the Strait of Canso, and another at North Sydney, 6 miles distant. Water transportation, however, is good by sail vessels to almost any point, as there are numerous bays and arms of the sea.

The water-carrying trade is almost wholly controlled by the Canadian commerce, except in the export of coal to the United States, which, requiring large vessels, is chiefly in United States boats.

George N. West,
Sydney, *December 27, 1898.* *Consul.*

VANCOUVER.

There is no wholesale paper concern here, and each retail dealer buys his supply of stationery on his own account. They are very reticent when asked for information. I inclose a letter from Mr. J. C. McLagan, editor of the World, a daily newspaper published here, which gives pretty full data from his point of view.

The population of this city is estimated at about 26,000. I am [illegible] to give the percentage of illiterates.

I have no doubt the people here have mechanical traits that would enable them to be producers of paper; if some capitalist should establish a mill, competent laborers would easily be found.

CONSUMPTION.

Paper is used for three daily newspapers in this city, several weekly newspapers in different parts of the Province, two or three weekly papers in this city, and one or two monthlies.

The coarser kinds of paper are used in large quantities by the fisheries and the merchants for wrapping purposes. All kinds of paper are used, from the coarser grades of wrapping paper up to the finest quality of stationery. I do not know of any special requirements as to weights and sizes. I am not able to give the market price or terms of sale beyond what will be found in the inclosed letter of Mr. McLagan.

There is no means of obtaining information in regard to the amount of paper consumed.

There are no firms, companies, or brokers dealing in paper exclusively. Stationery is handled by persons who trade in various things. The newspapers import their own supplies, and wrapping papers are sold by the wholesale grocers, hardware dealers, etc. I can not tell the total number of users of paper, but there are some two or three hundred stores of different kinds, all of which use wrapping paper.

I do not think that any articles are manufactured here from paper or pulp.

As the country is rapidly growing, I have no doubt that the consumption of paper is likely to increase.

WATER POWER, RAW MATERIALS, AND FUEL.

There are three streams flowing into Burrard Inlet, from 2½ to 4 miles distant from the city, each of which would furnish considerable water power; but they are entirely undeveloped, with the exception of one, which furnishes the water supply for this city. These streams empty into the inlet at points where it is navigable for the largest vessels.

There is an abundance of wood suitable for making pulp on all the shores of the streams and in the near vicinity. I suppose that a considerable amount of rags might be collected in this city. If so, it would be very easy to transport them across the inlet, if a paper manufactory were established there.

The fuel used here is chiefly wood and bituminous coal. The coal is brought from Nanaimo and Wellington, some eighty miles from here, by water. I believe that the coal could be laid down at a factory at from $3 to $4 a ton; possibly for less, in large quantities.

Wood could be supplied almost at the cost of cutting it. There is the Douglas fir, which is claimed to be excellently adapted to pulp making, and at points up the coast and in the interior are found spruce, the aspen poplar, and other trees suitable for that purpose. I do not know of any other vegetable fiber or grass adapted to paper making.

There are no facilities for manufacturing paper machinery here, and none is made. There is a company known as the British Columbia Iron Works, which manufactures some machinery; possibly, it might make paper machinery should there be a sufficient demand for it.

BANKS, POSTAL FACILITIES, ETC.

The banking facilities are excellent. There are nine chartered banks in this city, and another will shortly be established. These banks have correspondents in all the principal cities of the United States.

There is a daily mail from the east, and also from the south. The telegraphic facilities are excellent. The Western Union Telegraph Company has an office here, and also the Canadian Pacific Telegraph Company.

I understand that a small quantity of fine quality of paper is imported from Japan. Aside from this, I think there are no importations except from the United States and eastern Canada.

I think there is an opening for a United States concern to establish a pulp and paper mill, and also a wholesale paper house, if the opportunity is seized before the ground is occupied by some Canadian concern. Our dealers, if they desire to build up their export trade to this Province, should canvass the district more thoroughly than they have done heretofore.

L. EDWIN DUDLEY,
Consul.

VANCOUVER, *January, 1899.*

Extracts from letter from Mr. J. C. McLagan.

The population of British Columbia in 1891, according to the census of that year, was 140,000. The proportion of illiterates would number about 30,000 to 40,000, these being composed of Indians, Siwashes (half-breeds), Chinese, and Japanese. On Alberni Sound, a small paper mill was in operation for some time, turning out straw and coarse wrapping paper for butchers, fishmongers, and grocers; but no manila paper was manufactured there. There is a large consumption of paper in this Province. The fisheries and fruit-packing establishments, as well as general merchandise stores, require wrapping paper. The consumption for news paper, I should judge, would run about 250 tons. The weights vary according to the quality used. The prices range from 3½ cents f. o. b. here up to 5 and 7 cents.

There are no news-paper-manufacturing firms in the Province, outside of the Alberni mill, which, I have been given to understand, is to be resuscitated shortly. We get our supply from a St. Louis paper company, whose mills are located at Oregon City. I have closed a contract for the current year of 15 carloads of 12 tons to the car. Laid down here, duty and freight paid, it costs $3.05 per 100 pounds.

I can hardly state the number of publications of all kinds; but, according to population and resources, there are more daily and weekly newspapers in British Columbia than in any other country that I know of. I think the daily newspapers in this Province number 15 and the weeklies about 50. There are possibly 6 monthlies. The total number of publishers I should judge to be between 30 and 40. I can not say anything about other classes of paper than news print.

There are ample opportunities in this Province for the manufacture of pulp paper, as we have large quantities of wood particularly adapted therefor. The consumption of paper is likely to increase, and that very largely. In eastern Canada, there are mills at Merriton, Georgetown, Valleyfield, Toronto, Windsor, Quebec, and several other places, as well as at Sault Ste. Marie, Ottawa, and I have been informed that a monster mill is now nearing completion somewhere in Quebec. There is likewise to be another mill for pulp somewhere in Algoma, said to be the largest in the world.

Under the heading of production, I would say that as yet very little of the water power in this Province has been developed. The principal fuel on the coast is coal, bituminous and hard. The facilities for transportation are excellent—unrivaled, I believe, anywhere. There is no paper machinery manufactured in this Province.

My impression is that all the paper made in Canada, news print as well as finer qualities, is made by machinery.

The tariff duties vary according to the class of paper.

Concerning schedule for transportation under Class A, rags are in great demand and are realizing from 5 to 7 cents per pound, according to quality. For Class B, products of the mill, we pay, from Oregon City to Vancouver, 20 cents per 100 pounds. From Toronto or Montreal, per all rail, the rate is 90 cents per 100 pounds. These are carload rates; for smaller quantities, the charge is practically double that asked for carloads. Broken carloads to points in the interior where there is no competition, or what are termed common points, are high, ranging from 2 to 2½ cents per pound. With the facilities we possess in this section of the country in the matter of land and water transportation, I have every reason for believing that a golden opportunity presents itself for the establishment here of a paper mill, not too large or too costly, but with a modern plant. We have direct steam communication by the Empress Line with China, Japan, and all connections made at ports in these countries; and with the Australasian colonies, by way of Hawaii, Fiji, Suave, and New Zealand. I have seen large quantities of American paper going through in bond from the east and south to points in those countries.

VICTORIA.

POPULATION.

The population of Vancouver Island in 1891, at the time of the last census, was given as 26,849, of which 16,849 were in Victoria, 5,000 in Nanaimo, and the remainder in small detached settlements throughout the island. No official data is to be had since that time.

The population of Victoria is now claimed to be 23,000, and of Nanaimo 6,000; Wellington, Union, Alberni, Chemainus, and other settlements are estimated at 7,000 or 8,000; making a total of 37,000. Of this number, probably 1,000 are Indians and Japanese and 4,000 Chinese.

The proportion of illiterates is very small, not over 1 per cent of the white population.

The people have mechanical and other traits common to the Anglo-Saxon race, and with the requisite capital and machinery could produce paper or any other manufacture.

CONSUMPTION.

The uses of paper are manifold—principally for newspapers, books and pamphlets, wrapping, blank books, stationery, and all the thousand and one requirements of commerce in civilized countries. There are no industries peculiar to this island requiring paper.

All classes and kinds of paper are used here, viz, print, book, wrapping, fine flat, writing, wall, tissue, cardboard, record, building, etc. There are no special requirements as to quality, weights, and sizes.

Prices are about the same as in the United States and vary with the market, ranging from 2½ cents per pound for wrapping to 4 cents per pound for news, and to 20 cents per pound for flat record.

The terms of sale are usually four months on carload lots.

It is impossible to ascertain the quantities and values of paper consumed in the whole of Vancouver Island. Dealers and consumers decline to state how much they import or how much of any particular class or kind. The imports of paper from countries outside of Canada for the year ended June 30, 1898, amounted to $31,153. As nearly as can be gathered from the very imperfect data obtainable, the consumption of paper per annum is about as follows: Wrapping, bags, etc., 400 tons; news, 300 tons; book, 200 tons; flat and label, 300 tons; cardboard and parchment, 100 tons.

The firms in Victoria which sell paper are as follows:

T. N. Hibben & Co.
Victoria Book and Stationery Company.
Thomas Earle.
Simon Leiser & Co.
J. H. Todd & Co.
Lenz & Leiser.
Turner, Beeton & Co.
R. P. Rithet & Co.

All except the first two sell only at wholesale and deal principally in wrapping and the cheaper grades. The only general paper store on the island, where all kinds of paper are sold at both wholesale and retail, is the first named—T. N. Hibben & Co., of Victoria.

There are 5 daily papers, 3 semiweeklies, 8 weeklies, and 1 monthly published on the island. The number of printers is 14; of publishers, 10; of bookbinders, 5. Paper is universally used here in every bindery, in every manufactory, by every merchant, in every office, and in every family, to a greater or less extent.

There is no article manufactured from either paper or pulp on this island.

The consumption may be expected to increase in direct ratio to the population.

For book and news paper, the Canadian house of E. B. Eddy Company, of Hull, Ontario, has practically a monopoly. It keeps a resident agent here, and supplies almost the entire demand of the news offices and publishers. Fine record, flat, and writing papers are bought largely from the United States; paper boxes and cardboard also come from mills at Everett, Wash., from Massachusetts mills, and from wholesale dealers in St. Louis, Mo., one of which has a resident agent at Seattle, Wash., who makes monthly trips here.

PRODUCTION.

There is good water power near Alberni, and also near Nanaimo. At Sproat's Falls, 2 miles from Alberni, there is sufficient to furnish 5,000 horsepower, and on the so-called "canal," at Alberni, an additional 1,000 horsepower. Also, on the Nanaimo River, 7 miles from the city, there are falls which furnish 400 horsepower. These are the estimates given by practical men. Alberni is situated on the "canal," which runs 50 miles west into Barclay Sound, and thence into the Pacific Ocean. Nanaimo is on the Gulf of Georgia, 40 miles from Vancouver, and has railway communication with Victoria, distant 83 miles. There is developed water power at Goldstream, 12 miles from Victoria, which is used to generate electricity for the tram cars and for other purposes in the city.

Fuel is found in abundance. Wood can be procured in any amount; also coal. In large quantities, wood can be bought for $2.50 per cord and excellent coal for $4 per ton. Transportation facilities by water or rail are good, and cost, according to distance, from 15 cents per ton upwards.

As regards raw materials, a large portion of this island is undeveloped and covered with forests of pine, spruce, fir, alder, maple, cottonwood, hemlock, etc. In fact, the supply of wood may be regarded as inexhaustible and is easily accessible. It could be floated on streams to mills at a minimum cost. The price of wood cut is $2.50 per cord; less in large quantities. Rags are an unknown quantity. There are not enough to supply the present demand.

There are large iron works in Victoria which manufacture machinery; no paper machinery is now manufactured here.

The cost of labor is from $2 per day for day laborers to $5 per day for experts.

A paper mill at Alberni turned out about 500 tons of wrapping paper three years ago, but ran only one year. While running, it was capable of turning out 5 or 6 tons of wrapping paper per week. The mill was run by water power; it was of the old style, and not successful. A company is now being formed in Glasgow, Scotland, of $500,000 capital, of which half is subscribed, to rebuild, enlarge, and operate this mill under the charge of an English capitalist resident in Victoria. An English expert examined the site and reported favorably. The plan is to make paper from wood pulp. The plant is ordered in England and will be brought round Cape Horn on sailing vessels to save freight charges. The wood-pulp machinery is to be bought in Pennsylvania and to be of the latest modern manufacture. The company expects to have the mill in running order a year hence.

IMPORTS, MAILS, AND TRADE WITH THE UNITED STATES.

The Canadian tariff on strawboard, printing paper of all kinds, etc., is 25 per cent ad valorem.

Mails run daily between this point and the United States. The telegraph facilities are good, including direct connection with the Western Union Telegraph Company.

Some special grades of paper and cardboard are imported from England. The relative importance of the countries supplying paper and articles manufactured therefrom to this district is: First, Canada; second, United States; third, Great Britain.

Trade could be increased between this point and the United States in paper and in many other lines, were more attention given to the matter by our dealers. The Canadian manufactory at Hull, Ontario, has a resident agent here, who naturally secures the bulk of the trade. Occasionally, a commercial traveler comes from a Massachusetts firm, and an agent of a St. Louis house comes from Seattle every month. Large dealers here, who buy coarse paper in carload lots, say they get about half from the United States. All who deal in or use flat and writing paper and stationery in large quantities prefer to buy our goods, as being not only cheaper, but of superior grade and put up in better shape. It is evident that closer canvass and more frequent visits of United States agents would largely increase the sale of paper and articles manufactured therefrom.

EXPORTS AND TRANSPORTATION.

No paper is exported from this island.

The rates for transportation to Victoria from Chicago and St. Paul are: In carload lots—for fine papers, $1.05 per 100 pounds;

for print and wrapping papers, 95 cents per 100 pounds; less than carload lots—for fine papers, $1.55 per 100 pounds; for print and wrapping papers, $1.35 per 100 pounds.

ABRAHAM E. SMITH,
Consul.

VICTORIA, *January 31, 1899.*

MEXICO.

MEXICO CITY.

The population of the city was 344,377, according to the census of 1895. The people have fair mechanical traits. They are not inventive. Paper is used for printing, lithographing, writing, drawing, wrapping, and manufacture of cigarettes, this last being the only industry peculiar to the country requiring paper.

Terms of sale are usually three months; sometimes cash.

IMPORTS.

It is impossible to obtain statistics of consumption of the domestic article. The import statistics for the fiscal year 1898, according to official returns, are as follows:

Description.	Quantity.	Value.
	Kilograms.	
White, unsized, for printing, filtering, and blotting	405,440	$25,477
Sized, white or colored pulp, for printing or packing	451,990	49,237
Tracing and press copy	132,123	36,731
Glutinous, suitable for writing	475,239	67,363
Brown and all other unspecified packing	1,583,820	99,360
Printed or otherwise manufactured:		
Printed, engraved, and lithographed advertisements	1,534	800
Tickets for lotteries, shows, and railroad	7,608	8,066
Skeleton forms (printed, engraved, lithographed)	30,543	20,544
With crest or monogram (printed, engraved, lithographed)	34,962	34,927
Printed, stamped, or engraved for books and illustrated papers	1,267	529
Lustrous, painted, mottled, marbled, satined	162,417	33,608
Gilt or silver	10,316	4,391
Waterproof, linen-backed, or imitation parchment	5,558	1,944
Gelatinized or albumenized	2,835	1,624
Common wall paper (ordinary grade)	146,673	35,650
Wall paper (gilt, silver, velvet finish)	73,360	30,553
Paper for cigarettes	723,383	239,453
Paper for blank forms, letters, and documents, and ruled for letters, accounts, and music	277,299	74,871
Bristol and other cardboards	302,881	50,021
Articles manufactured from cardboard		218,005

The countries dominating the paper trade, are: First, United States, second, England; third, France; fourth, Spain.

There are two importers or brokers and four mills. Bert. Cornwell & Co., care American Surety Bank, are leading importers or importing brokers.

MILLS.

The mills are:

Compañía de las Fabricas de Papel de San Rafael, Anexas Tlalmanalco, Estado de Mexico; office, City of Mexico, Calle Angel, No. 2; manager, F. Comparot.

Juan M. Benfield, Molino de Belem, Santa Fé; office, Calle de la Palma, No. 13, City of Mexico.

Meyran, Donnadieu & Cia., Santa Tereza, Tizapan; office, Calle Refugio, No. 21, City of Mexico.

Peña Pobre, Tlalpam; office, San Augustin, No. 12; manager, Feliciano Rodriquez & Co.

CONSUMPTION.

In the city of Mexico there are 5 daily papers of good circulation and 5 others of less importance; also 4 weeklies. Each of the other large cities of the Republic has one or two small weeklies, but there is hardly a newspaper of importance published outside of the capital. There are about 300 printers in this city and 15 to 20 publishers.

Playing cards and cardboard boxes are made on a small scale.

The consumption of paper is liable to increase. Attendance at public schools is compulsory. With increased education must come increased demand for paper.

WATER POWER, FUEL, AND TRANSPORTATION.

Water power is comparatively scarce. Coal and wood are used as fuel. Coal or its equivalent in wood is $18 Mexican per ton. Mexico is crossed from north to south by railroads. From east to west, there is a scarcity of steam transportation. When projected railroads are completed and tap the forests of the Sierra Madre, much of the present difficulty will be remedied. Two or three roads will probably be completed soon. At present, much wood is brought to this city by the Viga Canal and on donkeys. Other cities depend largely on donkeys (burros).

RAW MATERIALS AND LABOR.

The only raw material utilized consists of rags. There are many fibrous plants, especially of the cactus family, which, I am told, may be used later with suitable machinery. There are no facilities for making paper machinery.

Cost of labor in paper mills is from 50 cents to $3 per day in Mexican money. I am told there has been a production of some five tons per day for the last five years. Water and steam power is used by the mills. The paper is machine made and the processes are modern. The production is likely to increase. There are no pulp mills.

BANKS, MAILS, ETC.

Banking facilities with the United States and all foreign countries are good. There are responsible banks in all the large cities. Import duties and freight rates can be obtained from my report of November 23, 1898.* International mail and telegraphic facilities are excellent.

If United States manufacturers wish to extend their business in this country, they must send energetic representatives who speak Spanish to learn the needs of the market, and then furnish just what is desired.

ANDREW D. BARLOW,
Consul-General.

MEXICO CITY, *March 25, 1899.*

VERACRUZ.

POPULATION.

The population of the city of Veracruz, as taken by the last census, was 18,000; it is now estimated at 36,000. A conservative estimate would place the number of illiterate inhabitants at 20 per cent.

CONSUMPTION AND IMPORTS.

There is one small paper (manila wrapping) factory in Veracruz. Mexican labor is not skilled in this industry.

Aside from the ordinary uses of paper in this consular district—such as writing, printing, and wrapping—a considerable quantity is used in the manufacture of cigarettes, as well as in pasteboard and paper coverings for match boxes. The usual variety of papers is found here; the quality, weight, size, and price being practically the same as in the markets of the United States.

The importation of paper into this country is principally from European markets, the usual long terms of credit being given, viz, six to nine months.

It is quite impossible to obtain statistics as to the whole quantity of paper consumed in the country. Importations of papers through the port of Veracruz during the fiscal year 1896–97 † were to the total value of $836,877 ($437,687) and came from the following nations: United States, $78,431 Mexican ($41,019); Spain, $385,297 ($201,510); France, $130,161 ($68,074); Germany, $25,525 ($13,350); the balance coming from England and other countries. The total importation represented a weight of 2,912,820 kilograms (6,421,603 pounds), of which there came from the United States 656,785 kilograms (1,447,948 pounds); from France, 409,755 kilograms (903,346 pounds); from Germany, 459,901 kilograms (1,013,898 pounds); from England, 72,419 kilograms (159,655 pounds); and from Spain, 1,007,775 kilograms (2,221,741 pounds).

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* See Commercial Relations, 1898, Vol. I.

† Value of Mexican dollar for fiscal year 1896–97, 52.3 cents (Treasury valuation).

In this consular district, there is no firm or broker dealing in paper. The finer classes of paper are sold by the hardware stores, which take the place of the department stores in the United States. The following are some of the firms in Veracruz handling paper, the first four handling the finer grades of paper and the others the coarser qualities and selling at wholesale only:

R. Varela e hijo.
M. During y Cia. Sucs.
Sommer, Herrmann & Co.
H. C. Flood, No. 20 Calle Pastora.
J. Galainena y Cia. Sucs.
Calleja Hermanos y Cia. Sucs.
Ramon Marure.
Gomez Hermanos.
H. C. Flood, Calle Pastora, No. 20.
Viya Hnos. Sucs.
J. Gonzales Pages.

There are about 35 publications of daily and weekly newspapers in this consular district, and practically the same number of printing offices. The amount of paper consumed by each can not well be ascertained.

The articles manufactured from paper or pulp are limited in number. Education is advancing steadily, and the consumption of all classes of paper will probably increase correspondingly.

WATER POWER, FUEL, AND RAW MATERIALS.

There is a great quantity of undeveloped water power in this district; it would, however, cost a very considerable sum to develop it.

Fuel consists of wood, charcoal, and mineral coal. In the State of Veracruz, wood sells for $1.52 (79 cents) per small cart load (equal to about 1 cord of 12 feet); charcoal, at from 50 cents to $1 (26 to 52.3 cents) per bag of 1 to 2 bushels; coal, at $15 ($7.85) per ton of 1,000 kilograms. At inland points, wood and charcoal are obtained somewhat cheaper than above stated, but coal is from $5 to $10 ($2.62 to $5.23) per ton dearer. Transportation is quite expensive from points without railroad facilities.

Plenty of raw material out of which paper could be manufactured is at hand, such as cotton, corn husks, bananas, cocoanuts, maguey fiber, and other vegetable matters and substances. Rags and other waste material could also be obtained in considerable quantities. These would have to be gathered in a systematic manner, as there is no provision for their preservation at the present time.

MANUFACTURE, BANKING AND MAIL FACILITIES, ETC.

There are no facilities whatever for making machinery in this consular district; there is plenty of labor, but it is lacking in efficiency.

There is one small paper mill in this State, in the city of Orizaba, manufacturing common brown wrapping paper. Its facilities are limited, and its yearly output is not known.

The banking connections with the various countries mentioned are good.

Mail matter from Veracruz to Europe via New York will reach its destination in about fifteen days via steamer. The service is from six to seven times per month.

American manufacturers should investigate the present conditions, become acquainted with the consumers, and have representation on the ground ready to fill the demand. Customs and usages are entirely different in this country from those prevailing in the United States. Spain adapts herself to these conditions; hence she sends the bulk of the importations of paper. If American manufacturers will conform to them, there is no reason why the United States should not control the paper trade of Mexico. I would recommend that samples of all kinds of paper be transmitted to the various merchants mentioned in this report, or that agents be sent who understand the language, customs, and habits of the people and will keep in close touch with the trade.

WM. W. CANADA,
Consul.

VERACRUZ, *April 12, 1899.*

CENTRAL AMERICA.

BRITISH HONDURAS.

In reply to Department circular of November 16, 1898, I would say that the questions under the head of "consumption and imports" are the only ones that can be answered at this consulate, as British Honduras does not produce and export anything in the paper line. From the customs report, I can quote the total amount of entries, but can not classify the different kinds or quality. Wrapping, printing, and writing papers are entered under the head of "paper and stationery." The imports for the past year were:

From United Kingdom	$2,111
From United States	2,472
From Germany	134
From France	10

The duty collected was $472.40. The wrapping paper used here is of the cheapest grade of brown "straw," and a vast improvement in the article is needed. An attractive wrapping paper or serviceable paper bags could be introduced, but whether with much success, only a trial would show. The quantity of paper used by the printers is small and the quality poor. There are two weekly papers published in the colony—the Colonial Guardian and the Clarion. The Government issues a weekly gazette, and there are two church papers with a monthly issue. As the population of 33,000 is largely black and mostly scattered in the back country, the circulation of printed matter must of necessity be limited. The only manufactures of this colony are ice and sugar, both on a small scale. The wealth of British Honduras consists of dyewoods and mahogany. There are no banks and no telegraphic facilities, but there is ample steam communication with the United States and with Great Britain—a weekly mail line to New Orleans and steamers every two weeks to Mobile and New York. The service is good and the arrivals regular, but all this commerce is carried on under the British and Norwegian flags, the *Breakwater* of the New Orleans line being the only steamer under the American colors.

It is evident from the figures quoted that the United States controls over half the trade in the line for which the Department calls for information, and it could be increased; but with a total importation of less than $5,000 per annum, the market is not very valuable.

If the long-hoped-for railroad is ever begun and completed, with the result of opening up the 7,500 square miles of country, the increase in population and the demand for more articles in all lines will naturally increase the consumption of paper in its various forms and uses.

W. L. AVERY,
Consul.

BELIZE, *December 20, 1898.*

GUATEMALA.

POPULATION.

The census taken on the 26th of February, 1893, gave 1,364,678 inhabitants as the total population of the Republic, and the present population will probably approximate 1,500,000. Of the census population, probably 900,000 are Indians, of whom not many more than one in a thousand can read or write. This makes the percentage of illiterates very high; it is probably between 80 and 90 per cent of the whole population. Unquestionably, the people of the cities would with proper opportunities and encouragement become producers of paper.

CONSUMPTION.

The uses of paper have always been, and will continue to be, very limited, its main use at present being for printing purposes. The waste in printing offices, as a rule, is sold to dealers in all commercial branches and used as wrapping paper; manila and straw paper of all kinds, known as wrapping papers, being considered almost a luxury, the high cost, after paying duties and transportation, preventing general use. In many instances, plain banana leaves are employed instead. There are no industries peculiar to the country requiring paper. The kinds of paper used are principally news (print), book, and cigarette paper.

The printers being few and, as a rule, inexperienced, they buy whatever they can find in the market, regardless of quality, weight, and size, and adapt it to their uses as circumstances require. They import occasionally; for instance, when good terms are offered by any traveling salesman, the printer selecting from the samples shown him such qualities as he thinks he can use in his business.

As to the market prices, printers here hardly ever pay the same price twice for their stock. There are several reasons for this. In the first place, the stationer from whom the printer generally buys his paper rarely duplicates imports of the same quality, weights, and sizes, and changes prices very frequently. Almost constant fluctuation in exchange and alterations in customs duties are the principal causes of the unsteadiness of prices, not only of paper, but in everything else.

The terms of sale of European houses are generally six and nine months, while American houses, as a rule, demand practically cash in advance.

The quantities and values of paper consumed can not be definitely stated. The statistics of the custom-house do not give the exact information asked.

Properly speaking, there are no paper firms or brokers; stationers, printers, and general stores doing all the business there is in this line. Siguere & Cia. and Goubaud & Cia., of this city, are important stationers and manufacturers of blank books.

There are about 20 newspapers published in this Republic, and 6 of these are dailies with probable circulation ranging from 600 to 1,500 copies each.

The number of printers—master printers—is about 8, all job offices. The national printing office is the only book office in this country. There are no publishers. Attempts in this line have invariably failed.

The national printing office consumes an enormous quantity of paper every year, and the stock is bought by different merchants, who supply the Goverment under contract. The nationality of the merchant furnishing the paper largely determines the country from which it comes; and, all things considered, he is apt to be a German.

The offices in the interior are few and small, supplying themselves almost entirely with a cheap quality of German paper for everything they do. This paper is an 8-pound cap—the kind imported by most of the general merchants—folded, put up in half reams, and sold at about $4 or $5 Guatemalan currency ($1.75 to $2.19) per ream (with exchange fluctuating at from 180 per cent to 225 per cent for gold).

No articles are manufactured from paper or pulp, except blank books.

IMPORTS.

Germany stands first in the paper trade, France and the United States following in the order named. Printing paper comes largely from the United States, but much wood paper comes from Germany, Austria, and Belgium. Drawing paper comes from France, straw packing paper from Germany, tissue paper from Austria, cigarette paper from Spain, and much of the finer quality of writing paper and envelopes from the United States and England. Wall paper comes largely from France and Germany, the better grades from the former and the poorer from the latter. The bulk of this paper sold is very cheap, but with bright colors and attractive designs. Very little comes from the United States.

There is no production or export of paper or articles manufactured from paper, so that my remarks on consumption are applicable to imports.

The consumption of high-grade paper in this country is so limited at present that it is hardly worth attention. The customs duties are high and rates of foreign exchange so excessive that present conditions are liable to continue, unless the Government should see fit to lower the duties.

The customs duties on printed matter are as nothing compared with the duties paid on any kind of paper. For instance, books of all kinds, novels, school books, or any printed matter, and on whatever kind of paper printed, if paper bound, are admitted free of duty. But on the same kind of blank paper the duty is 15 cents silver per kilogram (2.2046 pounds) for all kinds of cotton paper and 25 cents per kilogram for linen paper. Fifteen per cent additional is charged upon the whole amount of the shipment, and to both amounts 30 per cent gold (at the rate of 180 per cent premium), or its equivalent in silver, is added, making the high grades of paper articles of luxury. Duties are imposed upon gross weight. Under the circumstances, publishing and printing can not prosper, and authors have their works printed abroad.

UNITED STATES TRADE.

I doubt if a salesman representing a United States paper manufactory has ever visited this Republic. Occasionally, one sees an agent of a San Francisco jobbing house, who, of course, represents other wares, knows very little about paper, and is consequently unable to get his share of the small business there is to be had. His prices are certain to be high and his terms unsatisfactory to purchasers accustomed to European methods. On the other hand, German, French, Italian, and Belgian drummers frequently visit the Republic, offering good inducements, and generally succeed in appropriating the trade.

From observation, I am convinced that the superior quality of United States paper is appreciated here and this would be preferred if our manufacturers would do their part toward getting their product in the market. They must be prepared to give better terms than they have been willing to give in the past, when small orders have been sent them directly or through commission houses. Fair ledger, bond, laid and wove flats, linen, book, and news paper could be sold in small quantities at present. There is no doubt that they would be preferred to any European papers for their weight and size. The printers would soon learn the advantages they possess over others for their business.

I am a strong believer in establishing warehouses in the important cities of Central and South America, where purchasers could see what we make, and where the details of the business could be explained. If such a warehouse were located in this capital and well stocked with paper by firms who could afford to sacrifice some time and money in establishing their goods in this country, there certainly would be at least fair results after a year or two.

BANKING AND COMMUNICATIONS.

Banking facilities are inadequate, and particularly to the disadvantage of the United States. Exchange on London or Hamburg is always from ten to fifteen points lower than on New York or San Francisco, and it has frequently happened that merchants could not buy American exchange at any price. This is probably due to the fact that coffee, the one article of considerable export from Guatemala, is mainly sent to London and Hamburg.

This city is connected with the United States by cable, and the mail arrives once a week via New Orleans and Puerto Barrios.

Transportation is an important and expensive item to be considered. This capital is connected with the seaboard by but one railroad—the Central, running to San José de Guatemala on the Pacific—so that all shipments must be made to that port. The Pacific Mail steamers leave San Francisco on the 8th, 18th, and 28th of each month and reach San José from twelve to fifteen days later. The rate for all kinds of paper by this route is $10 gold per ton of 2,000 pounds of 40 cubic feet.

The Panama Railroad steamers leave New York three times a month for Colon. The goods are transshipped over the Isthmus Railroad, connecting at Panama with the Pacific Mail steamers for San José. This trip consumes about five weeks. The rate by this route is 1⅛ cents per pound gross weight. At San José, the Agencia Maritima Nacional (lighterage company) charges 50 cents silver (21 cents)—with exchange fluctuating from 180 to 225 per cent premium for gold—per 100 pounds. The Compañía del Muelle (wharf company) charges 50 cents silver (21 cents) per 100 pounds. The freight on the Central Railroad from San José to this city, a distance of 75 miles, is $1.25 silver (52½ cents) per 100 pounds.

A. M. BEAUPRÉ,
GUATEMALA, *January 23, 1899.* *Consul-General.*

SUPPLEMENTARY.

In my report of January 23, 1899, I stated that the Government printing office consumed a large quantity of paper, which was furnished by merchants of this city under contract. The bulk of the paper used is machine-finished white book, 28 by 42 inches, 50 pounds to the ream; also same size and kind, 70 pounds to the ream; also supersized and calendered paper of the same size. Messrs. Fischer & Weissman, of this city, are now furnishing the paper, and I would like to have some United States manufacturers send them samples and prices.

A M. Beaupré,
Consul-General.

Guatemala, *March 2, 1899.*

WEST INDIES.

BRITISH WEST INDIES.

ANTIGUA.

The seat of government of the Leeward Islands furnishes little towards the contemporaneous history of the paper trade. Of its population of 35,000, about 95 per cent is black or colored. The percentage of illiterates can not be officially stated, but is large. Having no water power, developed or undeveloped, and no wooded areas, the island can never figure as a producer of paper.

IMPORTS AND CONSUMPTION.

But four kinds of paper are imported—*i. e.*, newspaper print, toilet and wrapping, medium wrapping, and coarse wrapping. The three first named are supplied from London, the fourth from the United States. Some storekeepers buy direct, others through wholesale importing houses. The island has three weekly newspapers, with nominal circulation. From the fact that letter paper and envelopes are classed as "paper" in the Government returns, the precise total of importations of paper proper can not be given.

The blue book for 1897 gives the following returns of imports of "stationery and paper" subject to duty:

From—	Value.	
United Kingdom	£654	$3,139.20
Barbados	5	24.00
United States	213	1,022.40
Windward Islands	11	52.80
Total	883	4,238.40
Admitted free for Government use (from United Kingdom)	597	2,865.60

The duty is 10 per cent and one-third of the gross amount of such duty additional. Inasmuch as the consumption of paper depends upon the population, and as this population is decreasing rather than increasing, the prospects of an advance in the consumption are not encouraging. American paper manufacturers might, however, control the market in news, toilet, and medium wrapping, by going below the English prices for these articles.

MAIL, CABLE, AND BANK.

Antigua is eight days distant from New York by steamship and receives an American mail every ten or fifteen days. It has cable communication with the United States. Its only financial institution—the Colonial Bank—has branches in New York and London.

FIBERS.

The island abounds with vegetable fibers. To what extent, however, they are available for paper making is a mooted question, no tests ever having been made. Steps are now being taken to determine the value of the various species of fibers in question.

HENRY M. HUNT,
Consul.

ANTIGUA, *December 19, 1898.*

BERMUDA.

The very limited market of this little colony offers no field whatever for the paper trade. The population is estimated to be 16,000 souls. To this may be added, say, from 1,500 to 2,000 more to represent the garrison—a more permanent class than the naval contingent, that constantly varies, but has perhaps 500 people, more or less, who may be considered as representing a permanent number. There are but few adults, white or colored, who can not at least read and write. The schools are numerous, good, and are well attended.

There are no firms that deal exclusively in paper or paper stock. All dealers are retailers and will sell wrapping and other paper as householders may require.

There are no paper mills in the colony; nor can there be, as there are no streams—not even a spring or a brook—on the island, nor stock from which paper can be made. There are certain trees and plants that might be cultivated and utilized for stock, but, up to this time, no attention has been given to the subject.

The cost of fuel would also prevent any attempt at manufacturing. Coal is brought almost entirely from the United States for coaling vessels, for tugboats and local steamers, for the hotels and the small concerns needing power, and for domestic or house purposes. The price is regulated by the price in the United States, freight and charges and the dealers' profits added.

There are two weekly papers, both published in Hamilton—the Royal Gazette and the Colonist—with necessarily a small circulation. There are two or three small job-printing offices. All these concerns buy their stock in New York, finding rates and freights cheaper than from England. These purchases are insignificant in total amounts.

From these statements, it will be seen that Bermuda does not offer inducements for specialties. Its trade is small and is conducted by dealers who buy comparatively unimportant stocks for a general retail trade. They purchase in the markets of the United States, as well as in those of England.

W. MAXWELL GREENE,
Consul.

HAMILTON, *December 20, 1898.*

DUTCH WEST INDIES.

There are no manufactories of paper in Curaçao. The printing and writing papers of medium class used here are mostly imported from Belgium, Germany, and Italy, and the wrapping paper from the United States. The preference is given to the European articles only on account of the lower prices, as shipping, mail, and telegraphic facilities are in favor of the United States.

No statistics are obtainable as to the quantity and value of papers imported.

The import duty is 3 per cent ad valorem.

J. WUISTER,
Vice-Consul.

CURAÇAO, *January 14, 1899.*

FRENCH WEST INDIES.

The total population of Martinique, according to the census taken on December 31, 1894, was 189,599 souls. The percentage of illiterates may be estimated at about two-thirds of the above, if not more; but for the last thirteen years, there have been established in this island communal, or free, schools, besides a "lycée," or lyceum, for boys and girls, both affiliated to the French University, besides adult night schools. A large proportion of the population will, in the future, enjoy the benefit of at least an elementary education.

CONSUMPTION.

While it will be impossible to reply at length to each question under this head, for the reasons given above, I will state that paper is used in schools and offices for general writing purposes; in stores and shops, for wrapping—ordinary yellow straw paper being used; and in the printing or newspaper establishments. Of the latter, there are no more than three on the whole island, and the only publishing company is the Moniteur Officiel, or official gazette, which, besides publishing all decrees, ordinances, administrative changes, etc., contains the proceedings of the council general.

PRODUCTION.

As there exist no paper mills, the raw materials, such as vegetable fibers, grasses, or waste materials, receive no attention.

IMPORTS.

The imports of fine and ordinary paper come from France, as well as books of nearly every sort. They are brought by steamers and sailing vessels.

Wrapping paper is imported from the United States in very limited quantities, owing to the high customs duties, aggregating from 15 to 20 francs ($2.85 to $3.81) per 100 kilograms (220 pounds) net.

Rates of freight from France vary from 8 to 10 francs ($1.52 to $1.90) per ton by sailing vessels, and from 25 francs ($4.76), minimum rate, to 50 francs ($9.52) and 10 per cent on general cargo, by steamer.

A. TESTART,
Acting Consul.

ST. PIERRE, *December 28, 1899.*

SANTO DOMINGO (DOMINICAN REPUBLIC).

The population of Santo Domingo City is estimated at 18,000. The percentage of illiterates is about 70. I think the people have mechanical traits sufficient to become producers of paper, as there is now being built at Bocaktigua, about 20 miles from here, a paper mill to make all classes of paper.

Brown paper is used in large quantities and of different sizes for wrapping paper. Cigarette paper is imported in large quantities, there being many cigarette factories here. About 300 laborers are constantly employed in these establishments.

There are six printing houses, and a good deal of printing paper is used. White and colored paper is used for cards and for advertising bills, etc. The paper is made of cotton and is received in large sheets. A good deal of ordinary writing paper is used here; for Government paper, large white linen is used. A considerable quantity of fine silk paper is employed in making artificial flowers. For hardware wrapping, a very heavy, thick paper is used.

Brown wrapping paper is imported mainly from the United States. Cotton and silk paper come from Germany and France. Brown paper pays $5 per 100 pounds duty. Common writing paper pays $1 per ream; medium, $1.50; and the best, $2 per ream. Printing paper and paper for advertising uses pay no duty. There are no banking facilities here worth mentioning, but I understand that arrangements are being made to establish a good bank in this city. The mail facilities are not very good. I do not think that special efforts are being made by any country to build up paper exports to this market.

I think paper material can be found here, as there is a great variety of trees and vegetation, from many of which paper fiber can perhaps be obtained.

C. L. MAXWELL,
Consul-General.

SANTO DOMINGO, *February 15, 1899.*

SOUTH AMERICA.

ARGENTINE REPUBLIC.

The population of Rosario, by the census (imperfect) of 1897, was 110,000; present estimated population, 125,000, of which probably 33 per cent are illiterates. The people possess mechanical traits and could become producers of paper.

CONSUMPTION.

Paper is used in all ordinary ways—writing, wrapping, etc. There are several paper-box factories in this district using strawboards and glazed papers of different qualities. Among the classes and kinds of paper used I note cheap letter, ordinary jobbing, a fair amount of book; the letter being usually in reams of 400 sheets and job papers in reams of 500 sheets. The English sizes and weights are the same as American, while those of the French, German, and Italian mills differ. A very inferior quality of paper comes from Italy. In fineness, the French papers lead, with England, Germany, and Italy following in the order named.

The average market prices are:

		Cents.
Lithographic paper	per kilogram	18 to 50
Jobbing paper	do	12 to 30
Book paper	do	22 to 60
News (in England)	per pound	3

These prices are all in gold. One kilogram equals 2.2046 pounds.

Terms are notes at from three to six months.

It is impossible to obtain any statistics as to amount of consumption of each or any kind for any year. There are in Santa Fé 6 paper companies or firms, as follows: A. Woelflin, Ferrazini & Co., Jacob Penser, R. Uria, Pongs & Corom, and Lowe & Co., all of Rosario and of importance in the order named. Of publications, there are in the province of Santa Fé 8, of which 5 are daily newspapers, 2 weekly, and 1 magazine. There are 3 first-class printing establishments, 2 second class, and 5 third class.

The users of paper comprise all professional, mercantile, and business houses. Chiesa & Co. are very large manufacturers of cigarettes and require immense quantities, not only of the cigarette paper, but also of good grades of lithographic paper for wrappers.

PRODUCTION.

There is much undeveloped and very little developed water power in this district. One small paper mill is established at a point about 45 miles west of here, which I have been unable to visit or hear from, though I have delayed this report a month in the hope of obtaining some data.

Coal and wood are both imported into this province, the former from England and the United States, the latter from some hundreds of miles up the Parana River. They are too expensive to employ for paper machinery.

I can hear of no use being made of vegetable fibers in the manufacture of paper, though the supply is abundant. There are plenty of well-equipped shops here, in which paper machinery might be made, but none is made.

IMPORTS AND BANKING AND MAIL FACILITIES.

There are no available statistics from which I can compile answers to the first three queries under this head. As to banking facilities with each of the countries named above from which paper is imported, I will say they are very complete. There is a weekly and generally a semiweekly mail service to Europe. With the United States, there are no banking facilities, except through foreign hands, and no direct mail or freight steamer service. Therefore, I see no openings here for competition of American with European paper makers. The question as to what course the United States should pursue to build up its exports to this district has been more eloquently answered from many other points in Latin America than I could answer it, but I think the lack of ships and banks pointed out above should be one little guideboard to the "proper course."

JAMES M. AYERS,
ROSARIO, *March 8, 1899.* *Consul.*

BOLIVIA.

I inclose a table showing the amount of paper imported into Bolivia from the different countries during the first six months of 1898. The information was very hard to obtain, and constant interviews and correspondence have taken place since last December regarding the subject. I am indebted for the data obtained to Consuls Meir, of Mollendo, and Green, of Antofagasta; to Mr. Ballarian, of La Paz; and to numerous merchants of La Paz, Cochabamba, Sucre, and Oraro.

GEORGE H. BRIDGMAN,
LA PAZ, *June 9, 1899.* *Minister.*

Paper imported into Bolivia during the first six months of 1898.

Description.	Quality.	Consumed—	Whence.	Quantity.	Official value.	
				Kilos.	*Bolivars.*	
Letter paper	Cotton	By the public	Germany	100	40.00	$16.84
Printing	do	Lithography	Antwerp	520	104.00	43.78
All use	do	Office	Havre	290	72.50	30.52
Do	do	do	do	112	44.80	20.54
Letter paper	Common block	By the public	do	190	76.00	32.00
Do	do	do	do	90	36.00	15.15
Do	do	do	England	31	21.10	8.88
Do	Cotton	do	do	5	3.50	1.47
Filter	do	Wine vault	do	43	30.10	12.67
Printing	do	Lithography	Germany	7,976	1,595.20	671,58
Letter	Common	By the public	do	109	43.60	18.36
Invoice	do	Commerce	do	21	14.70	6.19
Letter	do	do	do	212	84.80	35.70
Do	do	do	do	113	45.20	19.00
Wrapping	Colored	do	do	122	24.40	10.27
Filter	Common	do	Belgium	46	32.03	13.48
Do	do	do	do	30	21.35	8.99
Blotting	do	do	Germany	19	5.70	2.40
Wrapping	Colored	do	do	246	39.36	16.57
Printing	White	Publications	do	2,260	452.00	190.29
Accounts	do	For accounts	do	137	95.90	40.37
Letter	Cotton	By the public	do	172	68.80	28.96
Printing	Common	Printing offices	do	1,565	462.25	194.61
Wrapping	do	do	do	5	1.90	.80
Accounts	do	Commerce	England	306	214.90	90.47
Blotting	do	do	do	32	9.60	4.04
Silk	do	do	Germany	21	19.36	8.15
Printing	do	Printing offices	France	19	19.00	8.00
Letter	Cotton	For the public	Germany	558	223.20	93.96
Do	do	do	New York	96	43.20	18.18
Do	Common	do	Germany	135	33.75	14.21
Cigarette	do	do	Italy	1,357	814.20	342.78
Note	Block fine	Lithography	France	39	15.60	6.57
Silk	Common	Commerce	Germany	7	5.60	2.36
Office	do	Public offices	Italy	1,145	458.00	192.82
Letter	do	Commerce	Germany	456	182.40	76.79
For maps	Light	do	do	2	1.20	.51
Letter	Common	do	do	129	96.00	40.42
Printing	do	do	do	380	95.00	40.00
Wall paper	To wrap	Painters	France	2,056	616.50	259.55
Blotting	Common	Commerce	Germany	1	1.80	.76
Do	do	do	Holland	7	1.40	.59
Letter	do	do	Germany	436	154.40	65.00
Printing	do	Printing offices	do	432	108.00	45.47
Invoice	do	Commerce	do	568	113.60	47.83
Blotting	do	do	do	14	4.20	1.77
For copying	do	do	do	5	5.94	2.50
Wall paper	To wrap	do	do	1,242	372.60	156.86
Do	To gilt	do	do	300	120.00	50.52
For copying	Impermeable	do	France	7	8.40	3.54
Do	Silk	do	do	1	.88	.37
Filter	Common	Apothecary	do	4	2.80	1.18
Office	Note paper	Public offices	Germany	428	107.00	45.00
Letter	Block	do	do	109	43.60	18.36
Letter for Government use.			do	252	148.80	62.64
Letter	Common	Commerce	do	334	53.44	22.50
Total				25,292	7,509.16	3,161.35

NOTE.—The value of the bolivar for 1898 was 42.1 cents.

BRAZIL.

RIO DE JANEIRO.

After careful investigation and conversations with some leading newspaper publishers here, I am of the opinion that the paper manufacturers in the United States could compete successfully, as to price and quality, with the European manufacturers, who at present furnish all the paper used by newspaper and job offices in Brazil. I would advise our exporters to investigate the Brazilian market thoroughly. It seems to me that they could do a very lucrative business in all the commercial centers of this country.

Most of the newspapers use the so-called endless paper in rolls, like the ones used in the United States, with the difference, however, that none of our American printing presses are in use here yet, and that consequently the size of the paper is not the same as that used in the United States.

The names of the daily papers in Rio de Janeiro are: Jornal do Commercio, Jornal do Brazil, O Paiz, Gazeta de Noticias, A Imprensa, Cidade do Rio, Noticia, Tribuna, and Gazeta da Tarde. It might be well for our manufacturers to enter into correspondence with them, sending samples and giving prices f. o. b. New York.

There is also an opening for envelopes.

EUGENE SEEGER,
Consul-General.

RIO DE JANEIRO, *December 3, 1898.*

SANTOS.

The estimated population of Santos is 40,000 inhabitants; that of the city of São Paulo, 50 miles distant, is 200,000 to 250,000. The percentage of illiterates is very large—probably 90 per cent—and the mechanical capacity of the people is correspondingly small.

CONSUMPTION AND IMPORTS.

Paper is put here to every known use, it being particularly required for newspapers and book making. All kinds of paper are employed. The size required for official forms is that of our foolscap. The prices are very high. Ordinary wrapping paper sells here for $16 per bundle of 120 kilograms (264.5 pounds), the kind that could be easily bought in the United States for 4 cents a pound. The goods are generally shipped from abroad on consignment, to be paid for when sold. There are no statistics of the quantities imported or consumed, nor of the number of publications.

About half a dozen wholesale firms are engaged in the paper-importing trade, viz, E. Van Orden & Co., Casa Garraux, M. H. Bühnaeds & Co., Laemmert & Co., Alves & Co., J. C. Endrizzi & Co., Companhia Industrial de São Paulo, Companhia Impressora Paulista—all located at the city of São Paulo. The number of printers is about 10. None do important work, excepting Casa Garraux and Van Orden & Co. The publishers are Garraux, Laemmert, and a dozen newspapers.

The chief articles manufactured from paper are blank books, stationery, confetti, and paper flowers. The consumption of paper is likely to increase, because this district is prosperous, has been progressing very rapidly of late, and is probably the most flourishing region in South America. The German element dominates, the French ranking next.

All kinds of paper are imported at prices too varied for enumeration, from Germany principally, England sending but a small quantity. The banking facilities leave nothing to be desired. Three English banks, one German, one French, and several native banks extend every known convenience for international transactions through branch offices and corresoondents all over Europe and the United States.

WATER POWER, FUEL, RAW MATERIALS, AND MILLS.

As a consequence of the undulating topography of the State, waterfalls abound; and this source of power is practically inexhaustible, not more than 5,000 horsepower having been applied so far.

Imported coal and domestic timber are the fuels. Transportation facilities are afforded by over 3,000 kilometers (1,800 miles) of railroads in good and regular working order; the rivers are not navigable.

An abundance of suitable fibers is grown, notably the bamboo, and there are also available the rags and waste materials of the towns.

No facilities exist for making paper machinery, and none is made.

The cost of labor is 50 to 75 cents a day.

There are only two paper mills organized in this State, one at São Paulo and one at Itu; their output is small and of coarse quality. The power employed is derived from modern imported machinery, driven by water.

DUTIES.

The import duties are levied by the Federal Government and are uniform in every Brazilian port. I transcribe here the principal of the widely classified duties, calculated at the exchange of 8d. (16 cents) per milreis. All the rates are charged per kilogram (2.2046 pounds).

Articles.	Duty.	Articles.	Duty.
Pulp	$0.0032	Toilet paper	$0.048
Writing paper:		Wrapping paper:	
Plain, ruled, or lined	.056	Not printed	.024
Gilt, arranged for mercantile use	.16	Printed	.086
Printing paper, for newspapers:		Cigarette paper:	
Plain	.0016	Loose	.08
Satin finished	.016	In booklets	.208
Paper:		Wall paper:	
Printed, dyed, or colored, for binding and similar uses	.064	Printed	.416
Gilt, or silvered, real or imitations	.256	Gilt, silvered, or covered with velvet	.64
Blotting paper	.048	Envelopes	.144
Tissue paper	.096	Lanterns, lamp shades, etc	.32

MAIL AND TELEGRAPH.

Mail facilities are weekly and sometimes oftener. Transit to Europe occupies seventeen to eighteen days; to the United States direct, approximately three weeks. Santos and São Paulo are in direct cable connection with the United States and with Europe.

CONTROL OF TRADE.

No statistics as to imports are available. The bulk is sent by Germany to German firms. England, Germany, and France send travelers here regularly every year, and have established banks and steamship lines of their own nationality, in all of which respects the United States is deficient. Nearly all the foreign import houses here are German, branch establishments of firms organized at home. In this manner, a well-nigh indestructible trade lien is secured. There is not a single American import house established in this district, and American goods placed here have to contend, and will have to contend as long as the present state of affairs continues, against unwilling purchasers and intermediaries, as well as against more liberal credit terms. They succeed only when superior products are offered at lower prices. The opening for American paper and paper articles I do not hesitate to pronounce very auspicious. To improve this opportunity, manufacturers should send salesmen here and be prepared to grant reasonable credits to reliable houses. To exact cash with orders or on delivery of the bill of lading would be a serious obstacle to trade, but surrender of documents against acceptance of a thirty or sixty day sight draft would be considered fair terms by local buyers.

LOCAL PRODUCTION.

No paper is exported from here. The local mills produce only wrapping and printing paper for newspapers; no writing or fine paper.

TRANSPORTATION.

Transportation to Santos is by ocean lines under the British, German, French, Italian, and Portuguese flags, in order of importance. The charge from New York is 30 cents per cubic foot plus 10 per cent; all inland shipping is by rail. From Santos to São Paulo the rate is $2.27 per 1,000 kilograms (2,204.6 pounds).

JULIAN HAUGWITZ,
SANTOS, *December 31, 1898.* *Vice-Consul.*

CHILE.

VALPARAISO.

POPULATION.

The census of Chile in 1885 gave the population at 2,712,145; in 1895, it was 3,049,352. In 1875, of those above five years of age, 1 in 4.5 could read and 1 in 5.4 could write; in 1885, 1 in 2.6 could read and 1 in 3.3 could write. The people easily adapt themselves to mechanical labor.

CONSUMPTION.

Paper is used chiefly for printing, writing, and wrapping. The same kinds are employed as are used in the United States and Europe.

The ordinary white paper used in Chile for printing newspapers must not be glazed or sized, to obtain liberation of duties. This class enters in bales of the size required, chiefly of 30½ by 44 inches. Quantities come in rolls protected by wooden battens, covered with bagging and hooped with iron. Nearly all of this class of paper is imported from Germany.

There are no firms confining their business exclusively to paper, but there are many agencies in all parts of the country. The paper business appears to be in the hands of Germans almost entirely, although many nationalities do a little business in this line.

In December, 1897, there were published in Chile more than 200 dailies, periodicals, and reviews. In Valparaiso alone, there were 6 daily papers with a circulation of 30,000. The English, German, Italian, and Spanish colonies publish weekly papers.

In Valparaiso, there are 6 principal printers and over 20 of minor importance; in Santiago, 10 principal and over 50 of little importance.

The chief articles made from paper are bags for grocers, confectioners, boot and shoe makers. The consumption of paper is likely to increase.

PRICES.

Exchange rules the prices. On March 24, 1899, the value of the Chilean paper peso, or dollar, was 27 cents in American gold. At present, all sales are made for cash, due to the constant fluctuation of exchange.

IMPORTS AND DUTY.

The following table is taken from the Chilean statistics of 1897, none later having yet been published:

Importation of paper into Chile in 1897.

Articles.	France.	Great Britain.	Germany.	Italy.	United States.	Belgium.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Letter paper	8,463	69,429	296,023	28,254	5,097	....
Colored paper	10,146	208,013	501,798	8,662	8,269	326
Cheap foolscap	5,040	101,694	358,294	30,485	225	....
Straw wrapping	4,482	367,383	1,841,694	447,333	6,592	6,019
Cigarette paper	10,714	84,681	322,028	2,092	19,376	....
Common white printing paper	1,047	173,581	287,277	16,592	18,076	....
Superior white printing paper	441	709,720	2,626,922	10,803	215,041	....
Sand and emery paper	386	16,329	4,546	32,436	....	....
Wall paper:						
Colored	36,990	270,088	220,017	....	388	....
Gilt and bronzed	3,135	21,768	9,120	....	....	....
In rolls	9,874	80,228	....	....	65,565	....

Articles.	China.	Spain.	Peru.	Duty.
	Pounds.	*Pounds.*	*Pounds.*	
Letter paper	....	....	....	25 per cent ad valorem.
Colored paper	97	....	....	Do.
Cheap foolscap	73	....	....	Do.
Straw wrapping	1,186	....	....	15 cents per kilogram, specific.
Cigarette paper	....	6,534	1,788	35 per cent ad valorem.
Common white printing paper	....	....	....	Free.
Superior white printing paper	....	....	....	25 per cent ad valorem.
Sand and emery paper	....	....	....	Free.
Wall paper:				
Colored	....	....	....	25 per cent ad valorem.
Gilt and bronzed	....	....	....	35 per cent ad valorem if embossed, felt, or gilt.
In rolls *	....	....	....	Embossed, felt, gilt, or fine, 35 per cent; common, 25 per cent ad valorem.

* Of 8 meters length—the usual length of imported paper.

All duties are collected in Chilean gold pesos, or dollars, valued at 36 cents in American gold. There are sixty-nine distinct classifications of paper in the tariff.

WATER POWER AND MILLS.

An incalculable force can be utilized from the mountain streams running through the central and southern provinces. Many of these are near railroads. There are but few navigable rivers, and those that exist are distant from the centers of commerce. The sea offers easy and cheap access to the most important cities and towns.

There are 3 paper, 30 flour, and about 20 saw mills run by water power exclusively.

FUEL AND PAPER MATERIALS.

There is abundant wood fuel in the south. Chilean coal is plentiful and is used on the railroads and for manufacturing purposes. It is an excellent combustible, but is inferior to foreign coal. Chilean coal costs the equivalent of $5 in American gold per ton of 1,000 kilograms (2,204.6 pounds) at the coal ports of Lota, Coronel, and Lebu, and from the mines of Arauco and Carampangue. Australian (Sydney) and English coal costs on board in the bays and harbors of Chile the equivalent of $6 in United States gold per ton of 2,240 pounds.

Among raw materials suitable for making paper may be mentioned palm trees, canes, palm leaves and pods, straw, rags, waste paper, old rope, bagging, etc. The quantities are variable; straw abounds.

MACHINERY.

Facilities for making machinery exist, but its cost would exceed that of machinery imported, which is duty free.

WAGES.

The wage of a laborer working ten hours per day is $1 to $1.50 in Chilean paper currency per day; skilled labor and mechanics' wages range from $125 to $150 in Chilean paper currency per month. The Chilean dollar (paper currency) is worth to-day 27 cents in United States currency.

PRODUCTION.

The production is confined to coarser qualities of paper for wrapping. No fine papers or any kind of wall papers are made.

There are 3 paper mills, all run by water power—1 in Quillota, 1 in Ocoa, and 1 in Buin. None of them is doing what may be considered a remunerative business. The machinery of the Quillota mill was made in Belgium, erected in San Francisco de Limache, and was run by steam. It proved a failure and was pulled down and taken to Quillota to be run by water power. All Chilean paper is made by machinery.

The methods at Ocoa are modern. The other mills possess good, but not new, machinery. The production will no doubt increase, since the Government has levied heavy protective duties on imported paper, with a view to assisting Chilean industries.

BANKING AND MAIL FACILITIES.

The best of banking facilities exist between Chile and Europe, but few, if any, with the United States. Payments to American merchants and manufacturers are made by means of sterling bills of exchange on London at ninety days' sight.

Mail facilities are: With Europe (via Andes), three times per week in summer when the mountain passes are open, once a week in winter; also four times per month via Straits of Magellan; with the United States, four times per month via Panama. The average time via Andes and Buenos Ayres to Europe is twenty-six days; via Magellan's Straits, thirty-seven days; via Panama to New York, thirty-five to thirty-seven days. Two cable companies, one of them American and the other British, have connected Valparaiso with the rest of the world.

OUTLOOK FOR AMERICAN TRADE.

At present, there is but a small opening for American papers and none at all for pulp or articles manufactured from paper. On the latter, the duties are 60 per cent and may be considered prohibitive.

The paper business with the United States is increasing slightly. If an American manufacturer would establish a factory here for the production of wall paper of several qualities and designs, using the most modern labor-saving machinery and working on a small scale, there is a probability of success.

JOHN F. CAPLES,
Consul.

VALPARAISO, *March 24, 1899.*

ANTOFAGASTA.

POPULATION, BUSINESS, AND RAILWAYS.

This is estimated at about 55,000; at least 50 per cent of adults can read and write.

The business of the entire district is mining and the treatment of raw material in smelting and amalgamation establishments, mills, and nitrate works.

The Antofagasta and Bolivia Railway Company and the various concerns of the district have well-equipped shops and find no trouble in doing most of their work with natives, employing only a limited number of foreigners. If paper and pulp mills were established, native workmen here, as in the south, would operate them.

CONSUMPTION AND PRICES.

The same conditions and wants are found here as in our own mining districts, and the same rules as to cash and credit sales.

There are no firms or brokers dealing specially in papers; all kinds are sold by general jobbers and retailers.

Sterling prices now ruling for sundry sorts are:

Stationery, fair, for offices, etc., 6s. ($1.46) per ream.

Italian wrapping, 1s. 8d. (40.5 cents) per ream.

German wrapping, 1s. 2d. (28.3 cents) per ream.

Foolscap, average about 7s. ($1.70) per ream.

Wall paper, 3d. to 6d. (6 to 12 cents) per roll of 9 yards by 21 inches.

Printing paper, 4d. (8 cents) per pound.

There are usually 4 newspapers in the district, and all do job work; also 3 lithographers, who undertake all sorts of work.

Great Britain supplies most paper of all classes; next comes Germany and then France. From the United States, very little comes.

WATER POWER AND RAW MATERIALS.

The river here offers ample power, but the water is bad and might not answer. As there are no raw materials, however, no mills are erected.

IMPORTS.

The statistics for 1897—the latest—give imports as follows:

Description.	Quantity.	
	Kilograms.	*Pounds.*
Writing paper	5,462	12,042
Sundry colored paper	7,561	16,669
Foolscap	2,173	4,791
Wrapping paper	29,371	64,751
Sandpaper	128	282
Smoking-paper wrappers	1,984	4,374
Wall paper	207	456
Printing paper	2,937	6,475

The foregoing are direct imports, but a considerable quantity is bought by dealers here in Valparaiso, the principal distributing point on the coast.

Central and southern Bolivia import supplies via Antofagasta; but all is in transit, and no details are known.

American and European drummers sometimes visit the district, but without much success.

Of the 48,823 kilograms (107,635 pounds) imported, only 113 kilograms (249 pounds) came from the United States. One of the dealers here said that his experience with American stock was not satisfactory.

In reply to the question, "What course should the United States pursue to build up its exports to your district?" I would say, accept and follow the policy and methods laid down by ex-Consul Connolly, of Auckland, New Zealand, found in CONSULAR REPORTS for January, 1897, page 93.

DUTIES AND FREIGHT.

The duties are from 25 to 60 per cent ad valorem, payable in Chilean gold (18d.—36 cents—to the dollar). Exchange varies from day to day. The present rate is 11⅞ per Chilean dollar currency, so importers never know what gold will cost them.

Freight from Europe by steamer is 30s. per ton. While no nationality has a monopoly, it is pretty sure Austrian dealers hold the largest stocks.

EXPORTS.

The only exports consist of limited quantities supplied to border mining camps. The Antofagasta and Bolivia Railroad, from this port to Oruro, Bolivia, a considerable mining center, 600 miles distant and 1,200 feet above tide water, offers great facilities for export trade; but, as mentioned above, Bolivia's supplies mostly come direct and pass in transit.

GENERAL OBSERVATIONS.

The Chilean Government has endeavored for many years past to favor paper production, and many mills have been erected; but, so far as I know, none have been financially successful, though in some cases the quality of the product was fair. The duties are high enough to protect Chilean mills. The duty on blank books for general business purposes largely exceeds the original cost.

C. C. GREENE,
Consul.

ANTOFAGASTA, *January 27, 1899.*

IQUIQUE.

POPULATION.

According to the census of 1895, the population of this city was 33,106. For want of official data, I should say that 50 per cent of the native population is illiterate.

Chile is an agricultural and mining country, and comparatively little attention has been paid to manufactures.

CONSUMPTION.

Neither the census nor any other official publication furnishes the data requisite for a trustworthy answer to a majority of the questions. I therefore confine myself to such questions as can be answered with confidence in the accuracy of my replies.

There are no industries peculiar to this country requiring paper.

The classes or kinds of paper used and the requirements as to quality, weight, sizes, etc., are the same as in all similar commercial centers, and, as exchange is subject to constant and violent fluctuations, the market prices can not be satisfactorily quoted.

The terms of sale are cash on the 10th day of each month.

There are no statistics which enable me to state the quantity and the value of paper consumed in the whole country for each year. There are no paper firms, companies, or brokers in this city. There are about 10 or 12 printers, but no book publishers. The publications are limited to 6 newspapers and to occasional pamphlets.

There are no paper or pulp articles made here.

IMPORTS.

Importations of paper are from the following countries, their relative importance being in the order named: England, Germany, France, and the United States.

BANKING FACILITIES.

Banking facilities for transactions with all foreign countries, on a sterling basis, are furnished by the following four banks in this city, viz, El Banco de Chile, El Banco Internacional (Chile), El Banco Aleman-Transatlantico, and the Bank of Tarapacà and London, Limited. The last-named bank also draws on New York and San Francisco for United States gold.

MAIL AND CABLE FACILITIES.

Mails leave for New York and Europe three times each month. Time to New York, thirty days or less. Steamers make connection on the Isthmus with the Royal Mail from Colon to England, a semimonthly line. There are also mail communications with England via Valparaiso and the Andes and by the Straits of Magellan.

Cable facilities are afforded by the Central and South American Telegraph Company (Galveston line) and the West Coast Cable Company.

AMERICAN-TRADE OUTLOOK.

So far as I can learn, there have been no special efforts by European countries to build up a paper trade with this country, nor is the business controlled by any special nationality.

For American paper and for articles manufactured from paper, as also for all articles of American manufacture, there is an opening in this country. There is a demand for every variety of manufactured goods (with the exception, in this district, of stoves for heating purposes, overcoats, and agricultural machinery). In order to compete with European manufacturers, our merchants must be content with smaller profits and offer their goods at prices at least as low as their European competitors Higher prices are asked for American goods in this market than for similar kinds and qualities of English or German manufactures. I say similar kinds and equally good qualities in order to anticipate a possible reply that American goods are of superior quality to the cheaper article manufactured in Europe. If the American article is undeniably better than the European, it will be taken at its real value, for there is a market here for the best of everything.

The sending of advertising circulars and of commercial travelers to this country is not, in practice, attended with the results desired. Every importer of American goods in this city has his agent in the United States—generally in New York—by whom all purchases are made. He has carte blanche to buy in the open market, not only in New York, but in Boston, Philadelphia, Chicago, or elsewhere, such goods in any particular line as his principal in this city requires. Our merchants should treat directly with the agent, to whom they can show their wares and with whom they can arrange the terms of sale.

IMPORT DUTIES.

The following schedule gives the import duties on various classes of paper under the tariff which went into effect January 1, 1898:

Free list.—Printing paper, wrapping paper, sandpaper, emery paper, paper in ribbons for telegraphic uses, paper for sheathing vessels.

Articles.	Value per kilogram.	Duty.
		Per cent.
Paper for cigarettes	$1.30	35
In little books	3.00	35
Blotting paper		(*)
Music paper	.64	25
Paper for lithographs	.72	25
Paper for tracing	4.00	25
Paper for drawing (in small squares)	2.00	25
Paper, oiled, for letterpresses	3.00	25
Paper for plans (prussiate of iron)	6.60	25
Paper, carbolic (for reproducing copies)	8.00	25
Paper, foolscap, cotton:		
Plain	.72	25
Stamped	.80	25
With monogram	1.00	25

* 15 cents specific.

Import duties—Continued.

Articles.	Value per kilogram.	Duty.
Paper, letter and note, cotton:		*Per cent.*
Plain	$0.88	25
Stamped	1.00	25
With monogram	1.20	25
Paper, ruled for accounts:		
Cotton	1.20	25
Linen	3.00	25
Paper, for books:		
Linen (or mixed)	1.20	25
Linen, stamped	1.40	25
Linen, with monogram	1.60	25
Paper, letter or note, linen:		
Plain	2.40	25
Stamped	2.80	25
With monogram	3.60	25
Envelopes:		
Cotton—		
Plain	1.20	25
Stamped	1.40	25
With monogram	1.60	25
Linen—		
Plain	3.00	25
Stamped	3.20	25
With monogram	4.00	25
Rice paper for flowers	24.00	25
Paper, transparent, to adorn window panes (glacier)	16.00	25
Wall paper	$0.40 to 1.60	25 to 35

J. W. MERRIAM,
Consul.

IQUIQUE, *January 24, 1899.*

ECUADOR.

GUAYAQUIL.

POPULATION.

The population of Ecuador may be roughly estimated at 1,500,000, of whom probably four-fifths are illiterate.

PRODUCTION.

At present, there are no paper manufactories in the country. They may possibly be established as soon as the projected railway from the coast to Quito affords proper transportation facilities, as water power, raw materials, and cheap labor are abundant and the local demand may justify such a venture.

CONSUMPTION.

There are not more than 20 printing establishments in the entire Republic, 6 of which are located in Guayaquil. Manufacturers of cigarettes also use paper, none of which comes from the United

States. With the development of the country and gradual disappearance of illiteracy, the consumption of paper may be expected to increase in volume from year to year, leading possibly, for reasons stated, to the erection of factories.

There is no firm in Ecuador which deals exclusively in paper, but every jobber carries a stock.

FREIGHT.

Freight and duties being important factors in cost, light-weight papers are preferred; duties are levied by gross weights in Ecuadorian custom-house.

AMERICAN TRADE.

As to what course the United States should pursue to build up its exports to this district, I would repeat my oft-expressed suggestions, to wit: Employment of competent commercial travelers; extension of reasonable credits; meeting requirements of buyers as far as practicable; and, as regards this coast, pending the construction of an isthmian canal, using every effort to effect a reduction in enormous freight rates now charged.

IMPORTS.

Importers say that American papers can compete with European, but higher freights leave a smaller margin of profit.

Imports of paper into Ecuador.

Classification.	From United States.		From other countries.		Total.	
	Silver.	Gold.	Silver.	Gold.	Silver.	Gold.
Stamped paper	*$15,185	$7,380	*$6,141	$2,985	*$21,326	$10,365
Writing paper	12,478	6,064	42,602	20,705	55,080	26,769
Printers' paper	9,794	4,760	9,423	4,580	19,217	9,340
Wrapping paper	2,578	1,253	33,534	16,298	36,112	17,551
Wall paper	1,472	715	23,712	11,524	25,184	12,239
Cigarette paper	....	....	31,680	15,396	31,680	15,396
All others	2,070	1,006	10,331	5,021	12,401	6,027
Total	43,577	21,178	157,423	76,509	201,000	97,687

NOTE.—There are no ad valorem duties exacted in the Ecuadorian customs. All duties are collected by weight; therefore, the invoice valuations given above may not be exact.

* $1 silver=48.6 cents in United States currency.

Duties on paper (in gold) per 100 pounds.

For printing, packing, or wrapping	$0.71
For stamped paper	8.87½
For writing paper	3.55

The last rate includes all the other classifications on the books of the custom-house.

Details of imports.

Classification.	Quantity.	Value.	
		Silver.	Gold.
Writing paper:	*Met. tons.*		
Belgium	36.4	$16,227	$7,886
United States	17.2	12,478	6,064
France	19.3	10,870	5,283
Germany	31.6	10,523	5,114
Italy	6.2	2,749	1,336
England	3	1,657	805
Other countries	0.8	576	280
Total	114.5	55,080	26,769
Wrapping paper:			
Germany	204	27,823	13,522
Belgium	11.4	2,829	1,375
United States	7.7	2,578	1,253
France	5.4	1,681	817
Other countries	4.6	1,211	589
Total	233.1	36,112	17,551
Cigarette paper:			
All countries (none from the United States; imports from France, Spain, Germany, Italy, etc.)	59.6	31,680	15,396
Wall paper:			
Belgium	17.3	9,141	4,443
Germany	14:8	6,155	2,991
France	8.4	4,187	2,035
England	9.7	3,369	1,637
United States	4.8	1,472	715
Other countries	3	860	418
Total	58	25,184	12,239
Stamped paper:			
United States	8.4	15,185	7,380
France	1.4	2,312	1,124
England	1.2	3,811	1,852
Other countries		18	9
Total	11	21,326	10,365
Printing paper:			
United States	62.1	9,794	4,760
Germany	35.1	5,934	2,884
France	6.7	1,749	850
England	9.8	1,100	535
Other countries	2.8	640	311
Total	116.5	19,217	9,340
All other classes:			
United States		2,070	1,006
Other countries		10,331	4,021
Total	16	12,401	6,027
Grand total	609	201,000	97,687

PERRY M. DE LEON,
Consul-General.

GUAYAQUIL, *January, 17, 1899*

THE GUIANAS.

POPULATION.

The total population of British Guiana is 278,328; of Dutch Guiana, 64,372; and of French Guiana, 25,000, exclusive of 8,000 convicts. Of the total population, there are only about 6,000 Europeans. Exclusive of the East India coolies (about 120,000 in number), the illiterates comprise 50 per cent. The people have no mechanical traits suggesting that they might become manufacturers of paper.

CONSUMPTION, PRICES, ETC.

The paper used is stationery, printing, blotting, wrapping, wall papers, and building. There are no industries requiring any special kind. Stationers deal in blotting, tissue of all colors, copying, real Japanese, foolscap, blue cream laid (ruled and plain), note, letter, wrapping, brown, manila, dry goods, demy, blue and white, straw, etc.

The qualities used are fine to superfine in note, commercial, foolscap, etc., Turkey mill, linear, vellum, antique laid, thin cream laid; extra thick cream laid, antique, three qualities; bank wove, etc., with envelopes to match. These measure from 5⅜ by 3⅛ to 9½ by 4¼ inches; bankers' shape, with extra high flaps, from 5⅜ by 3⅛ to 7¼ by 4¼; draft, bag, 10⅝ by 4⅝; note paper, from 8 by 5 to 8½ by 5½; commercial and letter, 8 by 5 to 10 by 8; printing, double crown, 20 by 30; double demy, 22½ by 35; double royal, 40 by 25; etc. The weights of foolscap are from 13 to 17 pounds; blotting, 23 to 80 pounds; printing, double crown, 17 to 23 pounds; double demy, 24 to 30 pounds; double royal, 42 pounds. These are the sizes and weights usually imported. Wrapping, common to good, usual size 40 by 48, weighing from 70 to 150 pounds; dry goods, tissues, or manila, from 13 by 18 inches to 24 by 36 inches, weighing from 8 to 30 pounds. Straw paper is largely used by grocers, shopkeepers, bakers, etc., and they require paper 18 by 14 inches, put up in bundles of 5 reams each, weighing 8 pounds to the ream. This paper is manufactured in Germany and imported from England, and is landed at about 16 cents per ream. The duty is 10 per cent ad valorem. Wieting & Richter, De Jonge & Smith, B. S. Bayley, of Georgetown, Demerara, and Jas. Lade, of Berbice, are the principal importers of paper.

The English and Portuguese are the principal retailers at Demerara, the Dutch at Paramaribo. Brown paper is sold for 2¾ to 3 cents per pound; straw, at 18 cents per ream and retailed at 20 cents. Terms of sale are fifteen to ninety days.

Stationers' retail prices are as follows: Foolscap, from 24 to 32 cents per quire; note, 16 to 48 cents per packet of 5 quires; copying, 48 cents per quire of 48 half sheets; pot paper, 16 cents per quire; tissue, 24 cents per quire; blotting, from 32 to 80 cents; bank or commercial, 32 cents per quire; envelopes, from $1 to $2.56. The value of paper consumed will average per annum about $30,000 for stationery, $10,000 for manufactured, and $15,000 for wood and straw.

There are 5 printing and publishing firms in Demerara, 2 in Paramaribo, and 1 in Cayenne.

Paper used in Paramaribo comes mostly from Holland; that used in Cayenne comes from France.

BANKING AND COMMUNICATIONS.

There are 2 banks in Demerara, viz, the British Guiana Bank and the Colonial Bank, which buy and sell exchange on New York and London and have agents there and in the West India Islands. For mail and transportation facilities, I would refer to my annual report on trade and industries for 1898.*

IMPORTS.

Appended is a table of imports of paper and countries of origin for the twelve months ended March 31, 1898:

Manufactured:	
United Kingdom	$13,348.78
United States	805.70
Holland	185.60
Stationery:	
United Kingdom	29,152.46
United States	733.06
France	38.20
Wood or straw paper:	
United Kingdom	6,717.00
United States	347.78
Holland	4,084.42
British West Indies	775.40

With reference to the paper trade in this district and how to win it, I hold that there is always a chance for trade in an open market. With the exception of Cayenne, the territory embraced in this consular district offers a fair field, not only for the paper trade, but for many other products of the soil and industry of the United States; but the exporter must be prepared to conduct a spirited business campaign. A successful business enterprise can not be conducted at long range. Accomplished business agents should be sent here to study the situation and drum up trade.

GEO. H. MOULTON,
Consul.

DEMERARA, *January 12, 1899.*

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*See Commercial Relations, 1898, Vol. I.

PARAGUAY.

ASUNCION.

The total population of Paraguay at present amounts to 500,000, not including the wild Indians in the interior of the Chaco. The percentage of illiterates can not be given. The people have mechanical traits.

CONSUMPTION AND IMPORTS.

Paper is used for writing, printing, manufacturing cigarettes, and wrapping. Letter and writing paper with and without lines, printing paper for books and newspapers, wrapping paper of different qualities, and cigarette paper are used.

Requirements as to quality, size, etc., are:

(1) Writing paper in general, quality medium.

(2) Letter paper, 22 by 28 centimeters (8.7 by 11.1 inches).

(3) Printing paper for books of different weights, size in general 75 by 100 to 110 centimeters (29.5 by 39.3 to 43.3 inches).

(4) Printing paper for newspapers, quality and weight medium; size 65 by 96 centimeters (25.5 by 37.8 inches).

The market prices can not be obtained. The retail prices are: Letter paper, 6 to 10 sheets for 3 cents; writing paper, 8 to 12 sheets for 3 cents; wrapping paper, 500 sheets for 60 cents.

The terms of sale are credit for five or six months.

Germany sends most of the printing and writing paper; Norway sends printing paper; France and Spain, a little letter and writing paper. Germany controls the trade.

The following statement gives the quantities and values of paper imported in 1897:

Description.	Quantity.		Value.	Duty.
	Kilograms.	*Pounds.*		
Letter and writing paper	15,106	33,303	$4,214	25 per cent.
Printing paper	76,596	168,859	25,345	Free.
For lithographers	50	110	20	Do.
Pasteboard for book covers	4,000	8,818	1,000	Do.
Wrapping paper	34,187	75,369	5,140	25 per cent.
Cigarette paper	210	463	189	Free.
Paper bags	2,816	6,208	451	Do.
Other classes	4,783	10,545	1,668	25 per cent.

There are three paper firms—H. Kraus, Juan Quell, and Rius y Jorba—all in Asuncion. There are 5 daily and 15 weekly and monthly papers, 15 printers, and 20 publishers. The consumption is not likely to increase.

Paraguay has neither paper nor pulp mills.

BANKS, RAW MATERIAL, FUEL, ETC.

The Banco Mercantil, in Asuncion, has connection with banks in New York, London, Paris, and Berlin.

Raw materials—rags, wood fibers, and fibers from grass and other plants—are found in abundance. Water power exists in many places. Fuel—wood—is expensive only near Asuncion. There is a railroad between here and Villa Rica, and the Paraguay River is available for transportation throughout the country.

JOHN N. RUFFIN,
Consul.

ASUNCION, *February 1, 1899.*

URUGUAY.

MONTEVIDEO.

In two most excellent reports of my predecessor, Mr. Schramm, found in CONSULAR REPORTS Nos. 192 and 204, many of the questions propounded in Department circular of November 16 are clearly and sufficiently answered. Those that are not will be answered here, as well as can be done in the absence of recent data.

POPULATION.

The population was reported last month at 845,000 inhabitants. The percentage of illiterates can not be given. It is large, but is decreasing by reason of the enforced school system.

CONSUMPTION.

White paper is used for newspapers and books and to supply the usual demand found in a civilized country. The names of printers, publishers, and publications can not be given, as there is no official list. There are no manufacturers of paper from pulp in the country. The consumption of paper shows a small increase, and with a continuance of peaceful government it will be much greater.

PRODUCTION.

There is no paper produced here save a small quantity of brown wrapping. There is undeveloped water power at Salta, but it is covered with "concessions" that would have to be bought up at a high figure. Coal comes from Wales—some from the United States—and costs the large consumer an average of 33s. to 36s. ($8.01 to $8.74) per ton. There is no wood suitable for paper manufacture, except perhaps that of the "ombri" tree, which has a soft, flaky fiber; but this is not found in any great quantity.

There will be no mechanical producers of white paper here for many years, if ever—owing to the lack of materials needful, especially chemicals.

IMPORTS, BANKS, MAIL AND FREIGHT FACILITIES, ETC.

There has been no material change in quantity, value, or country of export since the reports named above. Banking facilities with European countries are first class; there are none with the United States, save through English banks. The same can be said of mail facilities, steamship lines, and freights—they are good with all countries but our own. Mails from the United States come quickest by way of Liverpool. Two cable companies give good service; one via Galveston and the second to Europe.

OUTLOOK FOR AMERICAN TRADE.

There is no special opening here for American paper, pulp, or manufactures of these goods. The people are not acquainted with articles of pulp. The best course to adopt to build up United States exports is the plan now successfully practiced at Caracas, Venezuela—a warehouse exhibition.

It is my opinion, based on a life-long experience as a newspaper publisher in the United States, that, so long as the transport conditions remain as at present—wholly in favor of the European paper maker—there is no safe chance for our exporters. The English, French, Germans, and Italians have each one or two lines regularly in the traffic, and can be relied on for prompt service. The United States is not so well served; the delays are generally very vexatious. I know of one cable order of $1,000 which has been seven weeks on the way and is not yet here. It is not for paper, but I quote it as an example. At the same time, a like order was cabled to Switzerland and the goods were on the market here twenty-nine days from date of cable. The delay is one of the most serious handicaps to American trade in these countries. Germany suffered at one time in the same way; her trades people saw the need and met it with one steamship line at first; she now has two for the South American trade, with corresponding advantages. I am of the opinion that our export trade needs nothing so much as the development of our shipping interests, to at least a degree of comparative independence. When one sees 14, 16, and 18 knot ships bring freight from Europe, and 8 and 10 knot boats come from our ports, taking twenty-three or twenty-seven days to Rio de Janeiro and thirty-two or thirty-five to the River Plata, the need of action is apparent.

Importation of paper for printing for the years 1895–1897.

Kilograms. Pounds.
1895 .... 1, 031, 683=2, 274, 448
1896 .... 1, 580, 614=3, 484, 622
1897 .... 1, 263, 279=2, 785, 025

Country of origin of paper imports for the years 1896 and 1897.

Country.	1896.		1897.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*
Germany	670,652	1,478,519	584,741	1,289,120
Belgium	509,946	1,124,227	376,538	830,116
United States	29,047	64,037	17,410	38,382
France	24,169	53,283	36,060	79,498
England	209,213	461,231	114,719	252,910
Italy	40,092	88,387	72,182	159,132
Argentina	109,752	241,959	74,379	163,976
Total	1,592,871	3,511,643	1,276,029	2,813,134

Germany has gained steadily since 1897, generally at the expense of Belgium and England. Italy has also gained. The official figures for 1898 are not at hand, and exact data can not be given; but it may be stated as a fact that the Germans are making continued gains in this line here.

ALBERT W. SWALM,
Consul.

MONTEVIDEO, *January 26, 1899.*

VENEZUELA.*

WRAPPING PAPER.

Large quantities of wrapping paper are sold and used in Venezuela, 90 per cent coming from Germany. Not a German steamship arrives at this port from Europe that does not bring wrapping paper. This is wood paper and is consequently a product which the United States ought to be able to sell as cheaply as any country.

Most of the printing paper for newspapers, etc., comes from the United States, which is a proof that we can compete with Europe in certain papers, and if American manufacturers study the wants of this very valuable trade, they ought to be able to win it.

Wrapping paper is sold in sheets of a light chocolate-brown color; it is thin but strong; the size of sheets is 18⅛ by 13⅞ inches; it comes in packages of 5 reams of 400 folded sheets per ream, or a total of 2,000 sheets, weighing when packed for shipment 9½ kilograms (20.94 pounds), or 1.9 kilograms (4.18 pounds) per ream of 500 sheets.

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*The above report, although not in answer to Department instruction, is included in the series because of the similarity of interest.

It is important that the paper should be as light as is consistent with strength, as the duties at the custom-house are levied according to weight.

This paper is sold in Hamburg f. o. b. for 19.50 marks ($4.64). The freight from Hamburg to La Guayra is 14 marks ($3.33) per ton of 40 cubic feet English.

The Venezuelan import duties are 25 centavos (about 5 cents in United States currency) per kilogram (2.2046 pounds), with an additional 12½ per cent on the 25 centavos per kilogram; so that a package of this paper weighing 9.5 kilograms (20.9 pounds) pays 2.67 bolivars (51.431 cents).

The wrapping outside of each package is generally one heavy sheet of paper, with the ends open, secured by two wires or light manila ropes. I inclose sample of the paper,* and will be pleased to send samples to any manufacturer who applies.

LOUIS GOLDSCHMIDT,
Consul.

LA GUAYRA, *March 22, 1900.*

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* Filed for reference in the Bureau of Foreign Commerce.

ASIA.

BRITISH INDIA.

In response to Department circular dated November 16, 1898, I have to say that from financial and commercial statistics for British India or from other sources I have not been able to get the necessary information to enable me to answer the questions in detail, and can only make a general report, covering the questions asked so far as possible.

I referred the circular with the questions to the secretary of the Indian Paper Makers' Association for such information as he could give, and he says that, though he is unable to answer the questions in detail, "the paper mills in India have hitherto been able to supply the requirements of the Indian market at rates which have checked imports from foreign countries, assisted as they have been by the advantages derived from being on the spot, and thus saving 5 per cent import duty, in addition to having cheap raw material and cheap native labor; and it has been found that, owing to a rapid increase in production by Indian mills, the supply has overtaken the demand; in consequence, trade is now in an unprofitable state, and, in order to reduce stocks and to find an outlet for their manufactures, an export trade from India is being fostered." He also refers me to certain issues of Capital, an able commercial newspaper published in Calcutta, containing articles on the "Paper trade of India," for more specific information, and I inclose herewith the articles referred to.

From these articles, as well as from the report of the secretary, to which I refer as the most reliable data, the paper-mill industry of India would appear to be in an unprofitable condition, and there seems to be no room for other mills, unless the process of manufacture can be cheapened by improved machinery or a cheaper raw material found.

PRODUCTION.

The following gives the number of paper mills and quantity of paper produced in India in the year 1897, as given in the Financial and Commercial Statistics of British India:

Province and district.	Nominal capital of joint-stock companies.	Average daily number employed.	Production.	
			Quantity.	Value.
Bengal:			*Pounds.*	
Bally Paper Mills	$391,040	637	8,616,956	$380,467
Titagarh Paper Mills	320,000	659	7,472,600	373,632
Bengal Paper Mills	304,000	631	6,000,000	320,000
Imperial Paper Mills	384,000	797	8,628,480	402,726
Total for Bengal	1,399,040	2,724	30,718,036	1,476,825
Northwest Provinces and Oudh (Lucknow)	256,000	437	6,061,643	229,651
Bombay:				
Girgaum Paper Mills	Private.	48	366,157	12,662
Surat Paper Mills	Private.	30	74,185	4,272
Poona Paper Mills	160,000	293	1,361,682	94,880
Total for Bombay	160,000	371	1,802,024	111,814
Total for India	1,815,040	3,532	38,581,703	1,818,291

In Bengal, the following descriptions of paper are made: Printing, cartridge, writing, blotting, brown, foolscap, water-marked, cream laid, wove, yellow wove, azure laid, envelope, etc. The material used consists of rags, grass, jute, hemp, straw, old gunnies, hemp bagging, ropes, waste paper, etc.

That made in the Northwest Provinces and Oudh is printing, brown, colored blotting, white cartridge, cream and yellow wove, azure and cream laid, wrapper, etc., the material used being rags, jute, hemp rope, gunny bags, straw, waste cotton, paper, and grasses.

The descriptions made in Bombay are brown, white, blotting, printing, etc., from gunny cuttings, rags, cotton, wheat and rice straw, wood pulp, grass, etc.

In 1881, there were 5 paper mills in operation, with a capital of $742,665, employing 781 persons and producing 8,124,445 pounds, valued at $384,960. In 1897, there were 8 mills at work, with a capital of $2,007,040, employing 3,532 persons and producing 38,581,703 pounds, valued at $1,818,291. The above shows the progress of the paper-making industry of India from 1881 to 1897, inclusive.

IMPORTS AND CONSUMPTION.

From the articles from Capital inclosed, it will be seen that most of the paper imported is from Great Britain and Austria, though large quantities of cheap paper are imported from Germany and Belgium.

While India has a population of nearly 300,000,000, the quantity of paper consumed is infinitesimal compared with that of the United States and Europe in proportion to the population.

This report is based on the exchange value of the rupee at 32 cents.

I regret not to be able to give more specific answers to the questions submitted, but trust the information conveyed may be interesting to our manufacturers.

R. F. PATTERSON,
Consul-General.

CALCUTTA, *February 13, 1899.*

[Clippings from Capital, May 6, July 7, and August 25, 1896.]

PAPER MANUFACTURE IN THE EAST.

Certain company promoters in London have from time to time evinced a strong fancy for the manipulation of paper and pulp mills, and negotiations of a widespread character concerning enterprises in India, China, and Japan have been pending lately. Brother Jonathan even had a turn. Only he gave it up—reluctantly, for want of support.

The true conditions of trade in the East are not generally understood by promoters. India is not blessed, like Scandinavia, with natural advantages in fiber and water power of a grand character, in themselves a fortune. Therefore, any addition to the paper mills in India which may be proposed by a clique of London financiers must be wholesomely considered. We think it necessary to sound a note of warning to likely supporters, whether contracting engineers, underwriters, or ordinary "B. P." investors, as any material expansion in manufacturing paper in India will most likely prove disappointing in the shape of money sunk and lost. About the year 1890, which was the zenith of the prosperity of Indian paper mills, the Bally Mills Company paid dividends even as high as 15 per cent, while the Titaghur Paper Mills went 1 per cent better and boldly declared 16 per cent. The fact, however, must not be overlooked that in respect to the companies mentioned, local influence, connections, and trade advantages preponderated, and some of the directors were in a position to control large local orders for paper in governmental and educational centers.

Other new mills have, during the last five years, been erected in India, and old ones have increased their output by extension of works and additions to plant, with the result that competition locally has now become quite acute. Mills disadvantageously located have to their cost found it almost impossible to profitably compete with paper mills on this side of the Indian Ocean, European paper—particularly German—being imported almost as a surplus from overproduction at very low prices. Considering the cost to-day in India of raw materials—chemicals are a heavy item—the fall in exchange, and the imposition of an import duty, profits of paper mills in the East have been seriously reduced.

The conditions of manufacture are continually changing and the price of the product falling. If the profits formerly earned by the popular mills in India were likely to be maintained, paper making in that country would, with reason, be safely regarded as a first-class money-earning industry and a good investment. The changing conditions of manufacture of recent years, however, have resulted in declining profit; therefore, to those paper makers who are committed to the industry willy nilly and are struggling to make ends meet, the prospect of further competition must be simply appalling. The Bally Mills, Bengal, with a capital of 122,200, have been successful in the past; but the conditions of the times will be illustrated when we point out that the 10 per cent paid in 1893 fell to 5 per cent in 1894 and to

4 per cent in 1895, with only £275 carried forward. The Titaghur Mills, near Calcutta, have also had a successful career, and the handsome dividends paid must have courted and encouraged in a high degree the foundation and growth of other concerns.

But there are other mills in the East where enormous sums of money have been sunk and European skilled labor employed without any return whatever. It may be contended that the plant of nonpaying mills is not of the most modern description, and that the conditions of working have not been on the most suitable lines. Probably this is true to a limited extent; such contentions, however, are not applicable to the Imperial Paper Mills, where one of the finest and most complete equipments in the world is installed, and no money has been spared to make the works a thorough success. Yet, after three years' working, no dividend has been paid, although a late advice assures us that a profit has been made during 1895. According to several correspondents, writing from Bombay, Calcutta, and other paper-making centers, the present time is unsuitable for the investment of more capital in Indian paper manufacture, for the increase in the mills has already brought about much competition, and the market is being flooded with local and foreign paper, while profits, even for well-equipped mills with ample trading capital, have been steadily diminishing. The losses in Indian currency have materially hampered industrial enterprises generally.

INDIA'S PAPER TRADE.

The paper industry of India has for some time been under a cloud of depression, and the outlook, so far as the immediate future is concerned, is not very encouraging. There are many persons, however, who have great faith in the ultimate prosperity of the principal modern Indian mills, especially as the latter have greatly improved the color and quality of their paper; and the demand, it is contended, must continue to increase, owing to the growth of population, the spread of education, and the demand for literature.

It seems as if the Indian mills were rather too premature in increasing their capacity, as during the last three years or so six new paper-making machines were erected. In 1893, the Titaghur Mills started a new machine, and the Bengal Mills speedily followed the example. About this time the mills of the Imperial Paper Company were built, and three machines were installed. The Bally Paper Mills, not wishing to be out of the fashion, also started up another machine. This enormous increase in the production soon had its effect, and, owing to the severe local competition, and also the importation of cheap foreign paper, prices were cut down to a very low rate.

The fierce competition prevailing could not last long, and it was soon evident to some of the mills that they were cantering on in the direction of liquidation. Consequently, the mills in Bombay came to an understanding and formed a paper-makers' association. The association's existence was not altogether of the serenest character, there being evidences of discontent from time to time. True, the association did for a while succeed in checking the reckless competition following upon the starting up of so many new machines; but relations became somewhat strained, and a disagreement occurred amongst the mills, with the result that the association was suspended, if it may not be said to have collapsed altogether. Prices, too, have given way.

Probably the low price of the local-manufactured products has had an important influence on the value of imports of foreign paper, pasteboard, etc. The following statistics, covering a period of five years, are taken from the official statement of the trade of British India just published:

Year.	Value.	
	Tens of rupees.	
1894-95	347,524	$1,112,077
1893-94	494,208	1,581,466
1892-93	436,098	1,395,514
1891-92	470,339	1,505,085
1890-91	431,436	1,380,595

Most of the paper imported into India is received from Great Britain and Austria. German and Belgian paper makers, however, are keenly cultivating the market, particularly in regard to the supply of cheap paper.

THE OUTLOOK.

Paper makers in India have the satisfaction to know that the value of the foreign paper imported during 1894-95 was lower than either of four previous years. The fact, however, has to be recognized that Calcutta and other large towns in India are flooded with cheap Austrian and German paper; and, if local manufacturers are to suit this invasion, they must produce cheap lines to meet the requirements of the market. In regard to raw material, hemp bagging is scarce and higher in price, probably owing to the extension of railways and the decadence of the pack horse, the pack cloths formerly providing the bagging. Grass, equal to the best Oran esparto, is, on the other hand, much cheaper, the present price, say £2 10s. ($12.16) per ton delivered at the mill, showing a decline of 30 per cent compared with six years ago. There is also an abundance of jute waste, suitable for making cheap papers. Coal is considered cheap. The cost averages 7s. to 8s. ($1.70 to $1.94) per ton. The production of coal in India in 1894 amounted to 2,820,652 tons. In 1894-95, 823,314 tons were imported, and of this quantity 696,063 tons went to Bombay and Sindh.

CHINA.

CHUNGKING.

POPULATION.

The present estimated population of the city and immediate neighborhood is 300,000. The proportion of illiterates is about 60 per cent. An intelligent and observant official, long resident in the province, but not a native of it, says:

> Given 100 people as found on the streets of Chunking, and I estimate that 40 per cent of them can read and understand a proclamation, 30 per cent will have a foggy idea of its meaning, while to the remainder it will be utterly unintelligible. Among women, I should say that, at the most, 4 to 5 per cent can read or be considered educated.

PRODUCTION.

The paper produced in this province is of an inferior quality. It is all manufactured of bamboo, which grows plentifully all over the province. Mr. E. H. Parker, some time since the British consul at this port, thus describes the manufacture of paper from bamboo:

> Among the manufactures of Szechuan, that of bamboo paper is decidedly one of the most interesting. Young bamboos are first split into shreds, and are then placed in layers in a large pit, with a quantity of unslaked lime or limestone between each layer. Water is poured upon the mass, and it is left to seethe there for several months. The rotten bamboo is taken out and cleansed of the lime particles, after which it is placed in a bottomless barrel or steamer, standing upon an iron pan. A fire is lit below the steamer, and the mass is well boiled. It is next ground in a stone mill and raked out, being then deposited in a stone trough full of water, over which the workers stand. A curtain-like bamboo frame, about 3 feet broad by 18 inches long, as fine as a tooth comb, is then dipped into the mashy mixture and taken out with a thin film deposit upon its surface. This frame is gently placed upon a heap of similar deposit (which in large quantities looks like a pile of melted gingerbread) and carefully lifted, leaving the deposit behind. When the heap has dried, it is deftly torn into shreds of coarse paper. The coarest kind is called chih ching, or "paper essence." Ts'ao chih and shwui chih—*i. e.*, "grass paper" and "water paper"—are other names. The bamboo frames are very expensive, costing, the workman said, over 1,000 cash* apiece. They were paid at the rate of 18 cash the 360 sheets for the mere labor of taking the mash out of the trough, and stated that they could each of them earn 500 cash a day, and that 2 sheets of paper sold for 1 cash. At Chungking, however, the price is 300 cash a k'un (or ream) of 50 ho (or quires) of 30 single sheets. This would be at the rate of 5 sheets for 1 cash; but no doubt the qualities differ. A packet contains 50 ho, or quires, of 78 sheets—*i. e.*, 3,900 sheets.

CONSUMPTION.

The uses of paper are various. It is employed for writing material, for soles of Chinese shoes, for fancy boxes, toys, and artificial flowers, for sacrificial purposes, for papering windows, etc. There are no special requirements as to quality, etc. The quantities and values of paper consumed for each year are unobtainable. It is equally difficult to say if the consumption will increase. There are 4 paper firms in Chungking, and the amount of business done by them per annum is estimated at about 80,000 taels ($54,720). The names of the firms and order of importance are Tai He Shen, Tseng Sin Kien, Fu Shing Tung, and Kiang Chuan Tai. The total number of printers is about 8. They print entirely from wooden types. Last year, a native bought a hand printing machine from Shanghai as an experiment and is doing well. There are no publishers.

WATER POWER, FUEL, MATERIALS, ETC.

The province of Szechuan is well supplied with navigable water ways. For irrigating purposes, immense wheels measuring from 30 to 40 feet in diameter are employed. I quote again:

> The paddles are of matting and are propelled by the force of the current. Between each pair of paddles and running diagonally across the tire face (so to speak)

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* 1,000 cash equal about 45 cents in United States currency.

of the wheel is a bamboo tube, closed at one end and open at the other. As each of these descends, its open end catches up the water, out of which it emerges only when the position of the tubes is such that the water can not flow out. Of course, this position is reversed when the wheel has completed half a revolution, so that the water is poured from each tube as soon as it reaches the upper circumference of the wheel. But a bamboo channel is erected on a framework so as to catch this flow, and two other bamboo tubes or lengths of tube communicate at right angles with the two ends of this channel, and, slightly declining, carry the water to the fields above.

Of fuels, there are coal, charcoal, and wood. The only means of transportation is carriage by men, which is both slow and expensive.

The materials for making paper, such as bamboo, rags, and a tree called the "ken shu," are plentiful; bamboo selling at 300 cash the picul (14 cents per 133⅓ pounds) and rags at 5,000 cash the picul ($2.25 per 133⅓ pounds). The workmen employed at the factories are paid from 100 to 180 cash (4.5 to 8.1 cents) a day, including their board. The paper is handmade, and the process and methods of manufacture are those of long standing.

Regarding imports and exports of paper, none is imported into this city and district from foreign countries, with the exception of what is consumed by the few foreigners residing in the district. There are no exports of paper.

GEO. F. SMITHERS,
Consul.

CHUNGKING, *February 7, 1899.*

HANKAU.

PRODUCTION.

In reply to Department circular, I would say that there are no data available for a proper report. I have found no one able to give me reliable information outside of his special line. The trade is much divided. The Chinese are wary of giving information regarding their business. There are thousands of so-called paper mills in this district, but they are small affairs—a mere hut or shed of a few feet in diameter, usually situated in the mountains or hills where there is a stream of water that can be used in the manufacture of paper. Each mill generally employs three men. The Chinese use and manufacture only unsized paper. Their best product is sent to Pekin. They print and write only on one side of a sheet. The ink they use is made of lampblack, with a little glue added and mixed with water to give it body. This ink is rapidly absorbed on unsized paper. On sized paper, it absorbs slowly and is liable to blot.

The price of paper has almost doubled in the last few years, or rather the price has remained the same and silver has depreciated one-half; so that the natives have to pay twice as much for paper as they formerly did. Cash is the standard of exchange in the interior where the paper is made, and silver is not in circulation there. The value of cash is constantly changing.

The best paper is manufactured from mulberry bark and young bamboo. Lime is used to rot it. It is then soaked in water and pounded with a pestle turned by a crude water wheel. They dry the sheets of paper by putting them on a concrete wall or oven that has a fire inside. All work is done by hand, except that by the water wheel. The best paper in this district is made in the province of Kiang si, with Kiukiang, on the Yangtze River, as port of shipment. A great quantity of cheaper paper, made of rice straw, is produced in the provinces of Hunan and Hupeh. In a few places it is manufactured from bark and cotton, none being made from rags, which, compared with other materials, are much higher in price. The straw paper is rough, of poor quality, and is very cheap, but is used extensively. There are no foreign paper mills in this district. The Presbyterian mission presses here and in Shanghai, I am informed, do most of the printing of books, tracts, and maps for the mission work in the Yangtze Valley. They formerly used Chinese paper, but when the price advanced they began to use a paper made in Norway and bought in England for 4s. a ream; the freight here from England is about 13 cents gold per ream. Of course, the Chinese do not use it.

The better grades of Chinese paper are sold at a price that would seem to warrant a large trade being secured here by the United States if we would manufacture paper suitable for Chinese use. It must be unsized and properly packed so as not to mold in this damp climate. Colored paper, mostly red, is used extensively for visiting and official cards, sacrificial purposes, firecrackers, posters, and decorations.

In order to give more definite answers to the questions asked in the circular, I submit the following. I have obtained my information from leading Chinese merchants and others engaged in the business, and have endeavored to verify, especially as to price, the statements. I have to thank Mr. Liang, educated in the United States, for his kind assistance.

POPULATION.

The population of the district is estimated at 80,000,000. The uneducated number 50 to 85 per cent. The people have mechanical traits, but these are undeveloped.

CONSUMPTION.

Paper is used for writing, printing, wrapping, packing, labeling, account books, firecrackers, bombs, fans, sacrificial images and representations, paper boxes, fire sticks for smokers, windows, toilet, artificial flowers, wall scrolls, decorations, for lining clothes, soling shoes, and many other purposes. Among special industries may be named the making of firecrackers and images and soling shoes.

For convenience, we may say there are two classes of paper used here. The first class consists of twenty-one grades with many varieties; the second class, of eight grades with varieties. Most of the first-class paper is made from young bamboo and a much smaller quantity from bark. The second class is made from rice straw. For the first seven grades of the first class, hereafter designated as A, B, C, D, E, F, and G, the requirements are durability and whiteness. The weight is not so essential. These papers are used for making scrolls, wall decorations, valuable decorative articles, and the fine grade of fans. They are specially prepared, and great care is taken in their manufacture.

The following are the usual sizes of these grades. The figures represent Chinese inches. A Chinese foot has 10 Chinese inches and is equal to nearly 14 English inches.

	Inches.
A grade	80 by 15
B grade	80 by 28 60 by 64 40 by 20
C grade	80 by 28 60 by 24 40 by 20
D grade	60 by 24 40 by 20
E grade	40 by 20
F grade	40 by 20
G grade	40 by 20

The other fourteen grades of the first class are described below. Durability is essential; weight is more or less considered with reference to strength. The sizes are:

Grade.	Size.	Grade.	Size.
	Inches.		*Inches.*
H	32 by 20	O	24 by 14
I	20 by 30	P	28 by 16
J	20 by 30	Q	28 by 16
K	20 by 30	R	24 by 14
L	18 by 8	S	12 by 10
M	16 by 6½	T	28 by 16
N	15 by 4½	U	20 by 12

For the eight grades of the second-class paper, the essential consideration is cheapness and a certain number of sheets in a given weight. The sizes are as follows:

	Inches.
I grade	30 by 18
II grade	30 by 18
III grade	7 by 3
IV grade	7 by 7
V grade	15 by 3
VI grade	10 by 7
VII grade	6 by 4
VIII grade	6 by 4

The prices (gold) of these different grades are approximately as follows:

Grade.	Price.	Grade.	Price.
A ..... per 2 sheets, specially prepared...	$4.20	M ..... per package of 5,320 sheets...	$1.40
	.05	N ..... do.....	.35
B ..... per 10 inches...	.04	O ..... per package of 2,880 sheets...	2.10
	.03	P ..... per package of 8,000 sheets...	3.50
	5.60	Q ..... per package of 2,820 sheets...	4.20
C ..... per 100 sheets...	2.80	R ..... per package of 1,008 sheets...	.42
	1.40	S ..... per package of 2,304 sheets...	.42
D ..... per package of 94 sheets...	1.40	T ..... per package of 2,820 sheets...	4.20
	.70	U ..... per package of 1,290 sheets...	1.40
E ..... per package of 100 sheets...	.42	I ..... per package of 133 pounds...	1.40
F ..... do.....	7.00	II ..... per package of 94 pounds...	1.05
G ..... do.....	5.60	III ..... per package of 106 pounds...	12.60
H ..... per package of 1,267 sheets...	3.50	IV ..... per package of 960 sheets...	.21
I ..... per package of 2,450 sheets...	2.10	V ..... per package of 133 pounds...	1.40
J ..... per package of 1,440 sheets...	4.90	VI ..... do.....	.91
K ..... per package of 3,800 sheets...	1.40	VII ..... do.....	20.60
L ..... per package of 10,400 sheets...	7.00	VIII ..... do.....	18.90

Grades III, VII, and VIII are specially prepared papers for sacrificial offerings, entailing great care and labor in their preparation.

The terms of sale are according to prearrangement. Payment is usually made six days after sight of draft on goods from the interior, and at the end of month between parties at the ports.

The quality and value of each kind of paper used in this district yearly is estimated as follows:

Grade.	Packages.	Value.	Grade.	Packages.	Value.
A to G		$28,000	S	10,000	$4,200
H	40,000	140,000	T	80,000	336,000
I	60,000	126,000	U	20,000	280,000
J	4,000	19,600	I	140,000	196,000
K	12,000	16,800	II	100,000	104,000
L	1,000	7,000	III	30,000	378,000
M	6,000	8,400	IV	14,000	2,840
N	4,000	1,400	V	30,000	42,000
O	10,000	21,000	VI	140,000	127,400
P	6,000	21,000	VII	1,000	20,600
Q	8,000	33,600	VIII	2,000	37,800
R	8,000	3,260			

The total is approximately $2,000,000 gold.

There are some two or three hundred paper firms in this district. The most important are: Wong Loh Chih, Yu Yue Chum, Chee Mau Shum, Tien Fuh Chai, Ching Shing, Ching Wo Teh, Tien Shing Fuh, Chow Tung Tai, Shin Chun Yung, and Yew Ching. All are of Hankau, with extensive connection in the interior.

There are no publications worth speaking of. The Hankau Daily News (Chinese) has a circulation of about 1,000 copies. When the embargo which the Government recently imposed is removed, there is a likelihood of the other important cities publishing papers, as some of them have plants and are only waiting the removal of the prohibition. The provincial colleges sometimes reprint important publications, but to a very limited extent. The lithographic establishments turn out probably 20,000 Chinese books per year. There are about twelve lithographic firms. Every important shop in China does its own printing, each issuing its own wooden-block advertisements, etc.

There are about 8,000 fireworks factories, 13,000 shoe shops, and 3,000 shops engaged in making images and sacrificial offerings.

It is probable that the consumption will increase in proportion to the growth in the population. No other nationality than Chinese is engaged in the paper trade. As a rule, foreigners import paper for personal use from their own countries. Norwegian paper (sized) is being introduced to a limited extent among foreigners.

WATER POWER AND FUEL.

There are no data as to water power. Many small streams are used by the Chinese. As to fuel, there is plenty of bituminous coal. Price per ton in gold laid down at Hankau is $1.75 to $4.90. This refers to the higher grades suitable for boiler use. Wood can be had in abundance at a cost of $3.40 gold per ton at Hankau. Both wood and coal are products of Hunan province, where they can be procured at reduced prices. These fuels can be transported by water ways several months in the year.

RAW MATERIAL AND WAGES.

The raw materials for paper comprise bamboo and rice straw unlimited; also hemp, the yearly product of which is about 10,000 tons; cotton, with a product of about 8,000 tons; rags, about 15 tons.

Bamboo costs from $2.50 to $3.25 gold per ton; rice straw, $1.80 to $2.50 per ton at place of production. When laid down at Hankau, the former will cost $2.75 to $3.50 per ton, and the latter $2.50 to $2.70. Hemp costs $90 to $100 per ton; cotton, $160 to $180 per ton; and rags, $10 to $12 per ton.

There are no facilities for making machinery. Repairs might be made at Shanghai.

The daily wages of men are 9 to 10 cents in gold. Women receive 5 to 7 cents for ten hours' work. Usually, it takes eight or ten Chinese to do the work of one foreigner.

BANKS, TELEGRAPHS, AND STEAMSHIPS.

There are four foreign banks in Hankau, all having connections in Europe and the United States.

There are six mail lines connecting Shanghai with Europe and America. The Peninsular and Oriental and Messageries Maritimes maintain a fortnightly and the German Lloyd a monthly service (which will soon be semimonthly) with Europe, while the Oriental and Occidental and Pacific Mail and the Canadian Pacific connect with America—the former with a trimonthly and the latter with a monthly service. Besides the above, there are several freight lines. Between Hankau and Shanghai, there are six lines of steamers, giving daily service, Sundays excepted.

There are four telegraph and cable lines to Europe—one via Singapore and India, one to Japan and through Siberia, one via Helampo, and the other via Kiachta, both of the last connecting with the Russian land lines. Ample facilities are offered.

FOREIGN PAPER.

England, Germany, Russia, France, Norway, and Japan have agents here working up markets for their goods. These countries have firms located here in the import and export trade. All the business with the United State is done by these establishments.

The better qualities of unsized paper, if introduced, could no doubt find a good market here. Pulp would be an experiment. As a means for extending our trade, I would advise that the various organizations that have been formed in large cities of the United States be combined into a national organization. Permanent expositions should be opened in the larger cities of China and conducted by men of experience.

There are no exports, except to Hongkong, for Chinese consumption. The first quality costs about $350 gold per ton; second quality, $80 per ton.

FREIGHT RATES.

Ordinary rates of freight may be calculated at about 4.8 cents per ton for every 10 miles over 100 miles and 5 to 6 cents per ton for less than 100 miles. Freight from Hankau to Europe on general merchandise is about 35s. ($8.70) per ton of 40 cubic feet; to New York via Suez, 27s. ($6.56), and $10 gold overland via San

Francisco. These rates are liable to fluctuations. Shippers in foreign bottoms from China usually get a rebate of about 15 per cent.

Nearly all local transportation is done by native boats; in the interior, by river steamers to seaport. Business is pooled, and the rebate is given only to those shippers who during the year have not shipped except on steamers in the pool. England controls about 65 per cent of the trade in foreign bottoms. The terminal charges for porterage fees, etc., are generally covered by one-half of 1 per cent of the cost of the goods, except in very bulky, light, and cheap goods.

DUTIES.

Foreign printing paper is at present admitted free of duty. An attempt is being made to have a tariff imposed. Books and Chinese paper pay an import duty of about 49 cents gold for 133⅓ pounds first quality, and 28 cents gold for second quality.

Goods from and to the interior pay half duty (that is, one-half of the import and export duty) at the ports, if transit passes are provided; otherwise, they will be subject to payment of the likin taxes chargeable between the provinces, which generally amount to a considerably higher figure than the half duty. The half duty for cotton is about 12¼ cents gold per 133⅓ pounds; for rags, 1½ cents; for hemp, 12¼ cents; and for bamboo and straw, an ad valorem duty of 2½ per cent is charged.

L. S. WILCOX,
Consul.

HANKAU, *March 15, 1899.*

HONGKONG.

In reply to Department circular of November 16, 1898, I may say briefly that there is no market for American paper in Hongkong. However, if the colony is considered as a distributing center for the Asiatic coast and the American producer believes that he can compete with the papers that are manufactured here by the Chinese for sale to the Chinese, I may say that the market is practically unlimited. The Chinese as a nation are great consumers of paper, but it is usually in a form unknown to American paper makers. Millions of tons of it are burned annually as offerings to their gods; this is called "joss paper." It is used as window panes, for the lining of their shoes, for firecrackers, for punk sticks, and a vast amount for toys and for ceremonial occasions.

MANUFACTURE.

In Hongkong, there is one modern paper mill, fitted with the latest and most improved English machinery, at an original cost of $400,000

Mexican ($192,400).* It has a magnificent reservoir containing 44,200,000 gallons. The output of this mill per day is 90 piculs (12,000 pounds) of thin paper and about 13,000 pounds of thick paper. It makes one quality of wood-pulp paper, which sells for $8 Mexican ($3.84) for 133⅓ pounds; two qualities of good-weight rag paper, which sell from $12 to $13 Mexican ($5.77 to $6.25) per 133⅓ pounds; and one light-weight, red-lined quality of writing paper, from rags, selling at from $13 to $16 Mexican ($6.25 to $7.70) per 133⅓ pounds. All Chinese papers are very porous, so as to absorb the india ink that they use when writing and so do away with the use of blotting paper.

The Taishing Paper Manufacturing Company failed shortly after its organization and was bought in for $125,000 Mexican ($60,125). On that investment, the managers paid a dividend last year of $60,000 Mexican ($28,860). Its paper is all made for export and is sold along the entire China coast, in the Straits Settlements, and in the Netherlands Indies. It enjoys a monopoly on this island, and there will never be another mill built here, for the reason that all the available watersheds are reserved by the colonial government. However, it is possible that with the opening of the Kowloon peninsular extension, like enterprises may spring up across the bay.

The bulk of the paper that is used in China is made by hand from bamboo, and sells from $1.50 to $6.50 Mexican (72 cents to $3.13) for 133⅓ pounds. The process of manufacture is very simple. The bamboo is put into a large vat in which caustic soda and chloride of lime are mixed with the water. The solution is allowed to soak until a scum rises to the surface. This scum is removed and is rolled into paper by hand process.

In answer to the inquiry as to what course the United States should pursue to build up its export of paper to this district, I can only reply, Make paper to match the bamboo paper that is manufactured in Canton, where the wages of an expert paper maker are $10 per month.

PAPER IN THE PHILIPPINES.

In addition to the above, it has been suggested to me by Mr. Franklin Brooks, proprietor of the American, of Manila, that it might be well to enter into competition with the German paper merchants who control the paper market in that city. Printing paper weighing from 36 to 44 pounds per ream is now selling there from $4.80 to $6.50 Mexican ($2.31 to $3.13) per ream, and for the last six months the demand has been greater than the supply. This paper is inferior to our American paper, especially the glazed. I would say, speaking very conservatively, that about 3,000 reams are now consumed monthly, apart from that used by the Government. The revenue tax upon printing paper at Manila is 6 cents Mexican (2 cents) per kilogram (2.2046 pounds).

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*The Mexican dollar, July, 1899, was valued at 48.1 cents.

ROUNSEVELLE WILDMAN,
HONGKONG, *February 14, 1899.* *Consul-General.*

DUTCH INDIA.

POPULATION.

The population of Java and Madura numbers about 30,000,000; of the other islands, about 10,000,000; making the estimated total for Netherlands India 40,000,000. There has been no census since 1895. The above is a government estimate. About 50 per cent of the people in Java know something about reading and writing; in the other islands, few natives are educated.

The people have no natural mechanical traits, but with European supervision can be taught to do anything that requires no initiative on their own part.

CONSUMPTION.

The uses of paper are for newspaper, wrapping, and letter; also cardboard boxes and straw paper for sugar factories. This latter is the only industry here requiring paper.

The prices per kilogram for paper, delivered at the outer port of Batavia, are:

	Cents.
Fine note paper	20
Ordinary foolscap	14
Wrapping paper	10
News paper (about)	7
Straw paper (about)	2

These prices were given me by one of the leading publishers and stationers here—G. Kolff & Co.

The terms of sale are usually three to six months' credit.

The quantity of news paper consumed in Dutch India during the year is probably about 350,000 kilograms (771,610 pounds).

There are no paper firms, companies, or brokers.

There are between 60 and 70 different publications, either daily, weekly, or monthly, in Netherlands India; also about 20 printers and publishers; and 30 stationers, some of whom are included in the 20 printers and publishers. These figures are from government almanac and from my own estimates.

Nothing is manufactured out of paper here. The increase in consumption will be very slow. The Dutch dominate all branches of trade here, including paper.

WATER POWER, FUEL, RAW MATERIAL, AND LOCAL TRANSPORTATION.

There is an unlimited amount of water power, practically entirely undeveloped. The coast cities of Java and Sumatra have mountains immediately back of them, from which flow copious streams. These are turned into canals, which run through the cities into the sea.

The principal fuel here is coal, which costs about $7.50 per ton and generally comes from Australia, although recently a cargo came out from Baltimore. The planters also use much wood and sugar-cane refuse, which costs next to nothing and is good fuel.

The materials for paper making are bamboo and long grass, in unlimited quantities; a very small quantity of rags is available.

Transportation facilities are good. There are railroads running all over the island and frequent coastwise steamers from one town to another.

There is no apparent reason why paper should not be made here, except that the price of imported paper is so low that no one dares to try. Many have talked of it, but up to the present moment no attempt has been made.

IMPORTS.

See under "consumption" for classes and prices of paper imported.

The paper comes chiefly from Holland, Norway, Belgium, and Germany; but, as it is all, or nearly all, imported through Holland, it is entered at the custom-house as Dutch paper. The value of the paper imported for 1897 is given at the custom-house as a little over $500,000.

BANKS, DUTIES, AND MAIL FACILITIES.

The banking facilities here are excellent, there being several large Dutch banks and two English ones which sell and buy exchange on all parts of the world at lowest rates.

The duty on paper of all kinds is 6 per cent ad valorem.

Mail takes four weeks to Europe, five weeks to the United States (east coast), and four and one-half weeks to San Francisco. There are cable connections with all parts of the world.

FOREIGN TRADE.

No country, except Holland, is doing anything to build up the paper trade, the principal reason being that the colonial government, which is by far the largest consumer—taking nearly half of the paper used here—will buy only of firms in Holland.

Some time ago, an American paper manufacturer was here looking into the prospects for competing in this market. He abandoned the idea at the time, by reason of the high freight rates between the United States and Java.

Recently, however, there has been established a direct line of steamers from New York to Singapore, which, I understand, has reduced the rates considerably. The transshipment at Singapore to Batavia is, however, expensive.

The best course for American manufacturers to pursue is to find out in New York from the transportation companies the lowest price that they can get in freight rates; then make some large importer here an offer, after finding out what he has been paying. If the offer is cheaper than what he has been giving, he will undoubtedly accept it, as the average person here buys with little regard for quality and none for sentiment. It is solely a question of price.

Long credits—say three months—will probably have to be given.

There is little hope of inducing the government to buy from anywhere but Holland, as public opinion would not tolerate it.

OCEAN TRANSPORTATION.

There is direct transportation from Amsterdam or Rotterdam by three different lines of steamers running on regular schedule. All of the lines are Dutch.

The Messageries Maritimes (French) Line comes here, but goes no farther than Marseilles. The Queensland Royal Mail (English) runs from here to London, I do not think any paper is shipped by either of the two last-named lines, and the direct trade between here and Holland is practically controlled by the Dutch.

The coastwise trade can be carried on only by steamers of Dutch registry.

The freight on paper from Holland to Batavia is $6.80 per cubic meter (35.316 cubic feet) or per 1,000 kilograms (2,204.6 pounds), as elected by the company; heavy goods like paper are usually sent by weight. The paper contracts all provide that the goods shall be delivered at the harbor of Batavia.

SIDNEY B. EVERETT,
Consul.

BATAVIA, *February 3, 1899.*

JAPAN.

HIOGO.

EXPORTS.

It is shown by the monthly Japanese customs returns for 1898—those for the year 1899 not having yet been published—that the total declared value of all paper and paper manufactures exported from Japan during that year amounted to 1,833,658 yen ($893,162), of which but 87,787 yen ($43,718) was machine made or "European paper," and this was sent principally to China.

The manufacture of handmade paper, the principal kind used here, like the occupation of weaving, is one of the most widely distributed industries in the Empire.

Much of this paper also is exported to China, but the quantity sent is not stated in the customs returns.

The earliest obtainable data showing the exportation of paper from Japan is the year 1868, the total exports from that period until 1892, inclusive, being herewith tabulated:

Year.	Value.		Year.	Value.	
	Yen.			*Yen.*	
1868	41,357	$41,232	1881	130,571	$115,816
1869	19,128	19,070	1882	222,663	197,502
1870	35,235	35,129	1883	272,683	238,870
1871	30,958	30,865	1884	221,853	192,791
1872	69,272	69,034	1885	150,032	128,727
1873	66,542	68,342	1886	172,373	139,622
1874	47,752	47,608	1887	181,339	142,170
1875	48,499	48,354	1888	244,500	184,109
1876	54,619	54,455	1889	238,199	180,838
1877	50,534	50,388	1890	276,124	253,206
1878	51,817	51,662	1891	267,978	199,644
1879	58,334	58,159	1892	326,640	216,889
1880	102,401	102,093			

Itemized exports from Japan of paper, including paper manufactures, 1893–1898.

Articles.	1893.		1894.		1895.	
	Yen.		*Yen.*		*Yen.*	
Gampishi copying paper	81,551	$45,582	77,807	$38,592	94,906	$48,687
Wall paper	83,380	46,359	74,770	37,086	79,259	40,660
European paper (machine made)	14,891	7,279	13,547	6,719	40,005	20,523
Imitation leather	9,319	5,181	21,468	10,648	40,290	20,669
"Other paper"	158,104	87,906	172,171	85,397	243,591	124,962
Paper ware	201,369	111,961	303,795	150,682	506,933	260,057
Fans	458,869	255,131	343,066	170,161	430,197	220,691
Umbrellas	42,813	23,804	29,996	14,878	28,844	14,797
Lanterns	20,179	11,220	21,972	10,898	29,897	13,337
Total	1,070,475	594,423	1,058,592	555,061	1,493,922	764,383

Itemized exports from Japan of paper, etc.—Continued.

Articles.	1896.		1897.		1898.	
	Yen.		*Yen.*		*Yen.*	
Gampishi copying paper	165,855	$87,406	182,692	$90,981	277,849	$138,369
Wall paper	108,085	56,961	176,001	87,648	184,207	91,735
European paper (machine made)	54,705	28,829	67,889	33,809	58,792	29,280
Imitation leather	59,478	31,345	46,867	23,340	37,385	18,618
"Other paper"	201,687	106,289	298,491	148,649	293,193	146,010
Paper ware	430,098	226,662	320,155	159,437	362,317	180,434
Fans	734,384	387,020	939,473	467,858	497,676	247,843
Umbrellas	21,009	10,572	27,674	13,782	30,179	15,029
Lanterns	80,705	42,532	134,321	66,892	92,060	45,846
Total	1,856,006	977,616	2,193,563	1,092,396	1,833,658	913,164

The Kobé Paper Mill at this port, until recently under American management, is engaged in manufacturing large quantities of machine-made paper for printing purposes; also, soft, rough-finished paper for hand printing, made in several different colors for decoration; it is further used for advertisements.

This is a large establishment, running night and day throughout the year, without being able to keep up with its orders. This mill has an American superintendent.

"USUYO," OR COPYING PAPER.

This valuable handmade paper is shipped largely to the United States, and considerable quantities go also to Great Britain and other European countries. As to quality, its chief characteristics are its toughness and capacity for absorption, the latter feature making it possible to take as many as four, and even five, legible copies per sheet.

NAPKINS, LANTERNS, WALL PAPER, ETC.

Handmade paper napkins, handkerchiefs, and lanterns are largely exported to the United States and Great Britain.

During 1898, and perhaps previously, our country purchased more paper lanterns from Japan than did any other. Kobé is the central point for this class of manufactures, more than four-fifths of those produced being shipped from this point.

The total value of paper lanterns exported during 1898, as shown by the preceding table, was 92,060 yen ($45,846). This item has not been included since 1893 in the customs valuation of "paper manufactures" exported, but has been given a separate classification, in order to show the increased exportation.

No export duty is charged on either hand or machine made paper or their manufactures. The first export returns of handmade paper were published in 1886 and remained classified with "paper manufactures" until 1893, without much change in volume. The average was about 73,000 catties (95,630 pounds), valued at 42,000 yen ($20,-916), as shown by the next table.

Separately classified returns of wall paper began in 1884, with imports valued at 12,556 yen ($10,911), running up to 68,396 yen ($51,502) in 1888, 81,993 yen ($54,443) in 1892, and 184,207 yen ($91,735) in 1898, as shown in the second table below.

The exportation of machine-made paper was first classified as a separate item in 1875, and its yearly export, as shown below, has since remained very small; so that during 1898, only 58,792 yen ($29,278) worth was shipped from Japan, the greater part of which went to China.

In order to comply with the Department's request for a statement of quantities, values, and kinds of paper exported each year for which statistics are available in Japan, the following tables are given, descriptive of varieties, some of which date from 1874, the same having been taken from the Returns of the Foreign Trade. It will be observed, however, that the classification was not complete until the beginning of 1893, as is shown by the table immediately preceding.

All the information embraced in this report has been procured from the most reliable sources which were available; but it must be said that all the best sources have not been accessible, as certain manufacturers choose to retain the knowledge of the industry which they have gained by experience and observation. The exportation of handmade paper, including copying paper and paper manufactures, from the earliest date when it was mentioned as an item of export, has been:

Year.	Quantity.		Value.	
	Catties.	*Pounds.*	*Yen.*	
1886	81,207	106,381	41,758.73	$34,200
1887	56,638	74,196	33,314.84	26,119
1888	65,368	85,632	39,349.57	29,631
1889	62,196	81,477	39,076.13	28,682
1890	57,923	75,879	34,275.85	31,349
1891	92,126	120,685	51,938.76	38,695
1892	94,253	123,471	55,302.41	41,200

The exports of wall paper are stated below:

Year.	Value.		Year.	Value.	
	Yen.			*Yen.*	
1884	12,556	$11,911	1892	81,993	$54,443
1885	20,831	17,873	1893	83,380	46,359
1886	26,889	22,022	1894	74,770	37,086
1887	55,678	43,651	1895	79,259	40,660
1888	68,396	51,502	1896	108,085	56,961
1889	73,712	54,105	1897	176,001	87,643
1890	101,661	93,223	1898	184,207	91,735
1891	74,927	55,821			

The following shows the exports of European or machine-made paper:

Year.	Value.		Year.	Value.	
	Yen.			*Yen.*	
1875	120.39	$120	1887	8,832.04	$6,924
1876	277.27	276	1888	12,663.86	9,537
1877	2,654.00	2,646	1889	5,261.50	3,862
1878	2,851.20	2,842	1890	5,441.42	4,989
1879	6,437.75	6,419	1891	16,880.63	12,576
1880	6,281.90	6,263	1892	26,437.64	17,555
1881	16,698.25	14,811	1893	14,891.00	8,279
1882	38,298.93	33,971	1894	13,547.00	6,719
1883	25,332.56	22,192	1895	40,005.00	20,523
1884	68,916.58	59,888	1896	54,705.00	28,830
1885	2,949.48	2,530	1897	67,899.00	33,813
1886	8,238.34	6,747	1898	58,792.00	28,278

MANUFACTURE OF HANDMADE PAPER IN JAPAN.

The province of Kochi leads all others in manufacturing handmade paper, and after this come Gifu, Ehime, Nagano, Shidzuoka, and Hiroshima, in the order named.

The number of "home industry" paper-making establishments in Japan in 1895 was 62,500, with a total output valued at some 8,000,000 yen ($4,104,000). The province of Kochi, with 7,200 paper-making establishments, manufactured in 1895 paper valued at about 1,000,000 yen ($513,000), and the others mentioned averaged 3,500 establishments, with a total output estimated at 700,000 yen ($359,100).

The whole business is carried on very unsteadily. The toughness and flexibility of handmade paper adapt it admirably for many domestic uses not already named. Rain and sun umbrellas are made of it; when used for any purposes by which the article is exposed to moisture, the surface is oiled or varnished. It was also used by the Japanese army as underclothing while campaigning in northern China during the late war, and it is sometimes employed in place of leather and of cloth.

The sheets made probably average 18 to 24 inches in size. Much very poor and coarse-textured paper is made here from old paper, worked over several times with a small proportion of bast or bark pulp, prepared by boiling the bark with wood ashes or lime; the bast or bark is then beaten to separate the fiber, and a long fiber is produced.

The paper made of new material is of very superior quality and is well adapted to its special uses. This is largely utilized as a substitute for window glass by the Japanese, who paste small squares of it in the lattice frames in the front of their dwellings. The lately increased cost of bast pulp accounts to a great extent for the substitution of a less expensive but less durable article. The bast or inner bark of several varieties of deciduous shrubs and trees furnishes the long, tough, and pliable fiber from which the best qualities of handmade paper are made.

The present cost of bast pulp is 9 sen (4½ cents) per pound for best and 7 sen (3½ cents) for inferior.

Pulp made from the rough bark costs much less, and is used in combination with cheap bast pulps. Wood and straw pulps are also used with bast pulp to cheapen cost.

It is said that considerable quantities of No. 1 pulp are brought to Japan from Canada each month by Canadian Pacific steamers.

The best quality of handmade paper is said to be made from a combination of 70 per cent best bast pulp and 30 per cent of wood or straw pulp. An exceedingly valuable treatise on the manufacture of handmade paper in Japan and the materials from which it is made may be found in Rein's Industries of Japan, published by Armstrong & Son, New York.

In regard to foreign machine-made paper, it may be said that it is constantly coming into more general use in this country, both as writing material and for printing purposes; it is also extensively imported in blue, yellow, and white, for covering match boxes and paper boxes of many kinds.

IMPORTATION.

The Japanese are fast becoming a nation of newspaper readers. Some 2,500 daily and weekly publications are now issued, against 753 in 1895, and they are fairly well patronized. The daily paper, although generally limited in size, may be seen in the offices, stores, and shops everywhere, and in the hands of many belonging to the lower classes. The total number of issues of papers and publications during the year 1895 was 409,429,528, a rapid increase over former years.

For Japanese newspaper use, a light weight is required, both in sheets and rolls. A very serious error in regard to the requirement for light weight was recently made by an American firm, who shipped to this port a large consignment of news paper, consisting of 585 rolls averaging 500 pounds each. It was found by the consignees to exceed the weight limit for a certain rate of Japanese postage. Surveyors were appointed upon application, and they found it necessary to cut samples from the rolls, in order that they might be sent to experts in America, with a view to obtaining a reduction upon the shipment. Japanese importers of news paper are perhaps quite as particular in regard to the weight per square yard as they are to the quality of the paper itself, and this fact should be well remembered by the American exporter.

I have obtained, semiofficially, from a reliable Japanese importer of machine-made paper, the following items:

There are but five printing presses in Japan using news paper on rolls. Since the termination of the war with China, the Japanese have made the larger part of the news paper used by them.

This paper has been made by machinery imported from America and England. There is generally a good demand here for paper-making machinery. During 1897 its importation was very large, as is shown by the following table:

Importation of paper-making machinery.

Year.	Germany.		Great Britain.		United States.	
	Yen.		*Yen.*		*Yen.*	
1893	3,993	$2,220	15,408	$8,567	68,976	$38,351
1894	4,715	2,339	28,152	13,963	18,752	9,301
1895	5,085	2,609	33,616	17,245	10,199	5,232
1896	4,321	2,277	46,786	24,656	123,520	65,095
1897	6,939	3,456	351,470	175,032	395,585	197,000

Monthly returns for the year 1898 show that importations of paper-making machinery are insignificant in comparison with those of 1897, there having been but 50,333 yen ($25,066) worth brought to Japan, against more than 750,000 yen ($373,500) worth the year before. However, this fact should not deter exporters of such machinery from effort in this country, because, as stated elsewhere in this report, several new mills are now projected, some of which are in course of erection.

The Japanese do not find it profitable to make the fine, thin machine-made news paper. They make chiefly 31 by 42, 35 pounds per ream; therefore, it is found necessary to import from Europe and America a great deal of 27½ by 39½, 23 pounds per ream, costing at present 1½d. (3 cents) per pound, c. i. f. Japan. Some other sizes and weights, up to the weights which the Japanese do make, are likewise imported, as well as writing papers, such as manila and other tissues, which absorb quickly, as the Japanese use a brush to write with instead of a pen.

Some of the writing and other thin papers come from China, 49,223 yen ($24,900) worth having been sent from there during 1897. This export is increasing. "Simili" paper is imported in considerable quantities.

Half-coated cigarette-box paper of American manufacture, I am informed, is the exact kind and quality wanted here. The cigarette-box papers imported from European countries crack in folding, but American-made paper will not, and this is a very important feature in favor of our paper. Cigarette paper valued at 128,000 yen ($63,800) was imported in 1898. The Japanese can not make it. Tissue for cigarette paper is also imported from France.

The manufacture of matches is a prominent industry in Japan, and nearly all the paper used in covering the boxes is imported from Austria and Germany, the value averaging 13,757 yen ($6,800) per month from January 1 to December 1, 1898. Thin blue paper is largely used for match boxes; yellow paper is also imported for this purpose, and a heavier green paper for packing matches. Of colored unglazed printing paper of German manufacture, it is said that Kobé and Yokohama each use per month 5,000 reams, 500 sheets per ream.

There are also imported into Japan, but not largely, fancy papers, such as white and colored fine enamel, chromo litho, embossed and plain silver and gold paper, marble paper, drawing and blotting paper.

The usual size and weight of match-box paper is: For yellow, 22 by 31½ inches, 15 pounds per ream, and 23⅜ by 37⅜ inches, 19 pounds per ream; for blue, 25 by 37 inches, 17 pounds per ream.

It is suggested by Japanese importers of paper that our country should be able to make large sales here, particularly from mills upon the Pacific coast, thus saving overland freight. I shall be glad to forward to proper parties for inspection any samples of paper sent to this consulate. Shoyikikan, a large Osaka importer of paper, would be glad to correspond with American manufacturers, with a view to the greater introduction into Japan of American paper generally.

Users of imported papers state they are not partial to those sent by any special country, but assure me they will heartily welcome a more vigorous canvas upon the part of American paper manufacturers than has been lately made in Japan.

The duty on news paper will probably be abolished. A bill is now before the Diet for its abolition, and it is expected to pass and take effect within the current year. Progressive Japanese declare the duty upon news paper a tax upon knowledge.

The leading sizes and weights of both Japanese and imported machine-made papers are the following, rolled papers being of the same weight:

Description.	Size.	Weight.
	Inches.	*Pounds.*
No. 1	24 by 40	23 to 35
No. 2	25 by 37	25 to 50
No. 3	32 by 43	40 to 100

Present market prices for imported papers as above are from 4½ to 6 sen per pound for light-weight No. 1 quality, and 5 to 7½ sen for No. 2 (1 sen equals nearly half a cent).

Terms of sale are not long, thirty to ninety days being the limit.

The native production of machine-made paper has been thought for a few years past to average about 50,000,000 pounds per year, a quantity which, together with the paper imported, seems to have proved insufficient to supply the demand, as evidenced by the fact that several other mills are now in process of erection. These, when completed, are expected to increase the value of output in Japan to from 7,000,000 to 9,000,000 yen per year.

IMPORTS.

During 1898, there was imported into Japan machine-made printing paper for newspaper, book, and periodical use to the declared value of 2,283,208 yen ($1,137,038), being an excess of 1,426,251 yen ($685,000) over the year 1897, or nearly three times the value of 1897—a most remarkable increase.

The following tables show the value for the years stated of the total printing-paper imports:

Year.	Quantity.	Value.	
	Catties.	*Yen.*	
1893	2,465,655	217,694.52	$121,038
1894	2,533,080	257,857.36	127,897
1895	2,853,946	307,699.28	157,850
1896	7,517,678	723,437.80	381 252
1897	9,945,248	856,957.10	451,616
1898 (from monthly returns)		2,283,208.00	1,137,035

Imports of paper by countries.

Country.	Printing paper.		Other paper.	
	Yen.		*Yen.*	
1893.				
Great Britain	189,444	$105,331	52,878	$29,400
Germany	23,369	12,993	163,554	90,936
France	570	317	4,387	2,439
Belgium	4,222	2,347	15,438	8,584
Austria	....	....	3,576	1,988
United States	....	....	3,233	1,798
Switzerland	....	....	2,189	1,217
Italy	....	....	673	374
1894.				
Great Britain	116,118	57,595	104,109	51,638
Germany	67,382	33,421	265,452	131,664
France	1,289	639	3,265	1,619
Belgium	19,817	9,829	24,063	11,935
Holland	3,125	1,530	2,965	1,471
Austria	127	63	747	371
United States	....	....	4,358	2,162
Switzerland	....	....	130	64
1895.				
Great Britain	209,451	107,448	116,153	59,586
Germany	36,079	18,509	269,103	138,050
France	....	....	12,678	6,504
Belgium	37,591	19,284	57,078	29,281
Holland	18,780	9,634	10,257	5,262
Austria	....	....	4,145	2,126
United States	2,074	1,064	2,898	1,487
Switzerland	....	....	2,836	1,455
Italy	....	....	98	50
1896.				
Great Britain	376,136	198,224	159,493	84,053
Germany	182,094	95,964	4,512	2,378
France	9,120	4,806	10,413	5,488
Belgium	143,726	75,744	69,769	36,768
Holland	4,171	2,198	7,155	3,771
Austria	1,968	1,037	14,430	7,605
United States	6,193	3,263	1,795	946
Switzerland	....	....	2,755	1,452
1897:				
Great Britain	311,963	155,358	150,467	74,953
Germany	284,476	141,669	304,905	151,843
France	290	144	28,602	14,244
Belgium	104,645	52,113	56,685	28,229
Holland	784	390	18,441	9,184
Austria	25,248	12,574	13,299	6,623
United States	129,510	64,496	11,656	5,805
Switzerland	....	....	1,147	571

The total value of printing-paper imports during the year 1898, as before stated, was 2,283,208 yen ($1,137,038); but the monthly returns, from which the amount has been ascertained, do not mention the countries from which importation took place, as will the annual returns published later.

During the eleven months ended December 1, 1898, there were imported "drawing paper" valued at 51,692.84 yen ($25,742) and "photographic paper" valued at 67,264.56 yen ($33,597). It is difficult from the returns to ascertain the amount of stationery imported.

PRODUCTION.

Four companies with 6 paper machines are engaged in making strawboard. Thirteen companies operating 25 paper machines are now making white paper of as light weight as it is possible for them to manufacture, which, however, does not fully meet the Japanese requirement for thin, light-weight paper. Two of the above-named machines are owned by the Japanese Government and utilized in making paper for its own use.

The total number of printers or publishers is not yet ascertained. Only 2 mills are engaged in grinding wood pulp.

Watersheds are not extensive in Japan, hence the power is limited. A continuous supply of power accessible by railway or water is found in but few localities. Most of the mills use steam power.

The Fuji Mill has the best water power obtainable here—about 2,000 horsepower. There are, however, many localities in Japan where water power may be found in sufficient quantities to develop electric power, which, in turn, might be utilized in running paper mills.

The cost of steam power may be partially arrived at by the statement that soft coal of medium quality now costs in Kobé and Osaka 6 yen ($3) per ton, and at Tokyo 7.50 yen ($3.75).

Spruce and other fir trees are available in considerable quantities throughout the northern island of Yesso. A limited amount of sulphide pulp is made there; but, as stated, most is imported from Norway, Germany, and our own country. The amount, however, is not given in customs returns.

POPULATION.

The Japanese census returns for last year have just been published. They show that on December 31, 1898, the population of the Empire was 43,228,863, the males numbering 21,823,651 and the females 21 405,212.

PRICES.

The following-named prices for materials used by Japanese manufacturers of machine-made paper were obtained in January, 1899, from one of their number. The prices are per ton of 2,240 pounds.

Articles.	Price.	
	Yen.	
Straw pulp	90 to 100	$45 to $50
Rag pulp	100 to 110	50 to 54
Ground wood	70 to 75	35 to 37
Chemical fiber (unbleached)	120	60

Chemical fiber is mostly imported from Germany, Norway, and the United States.

BANKS.

The following is a list of the banks in this consular district (Osaka and Hiogo) which have extended their business to foreign countries:

Hongkong and Shanghai Banking Corporation; English.
Chartered Bank of India, Australia, and China; English.
Yokohama Specie Bank, Limited; Japanese.
Mitsui Bank; Japanese.
Mitsu Bishi Goshi Kaisha, banking department; Japanese.
National Bank of China, Limited; English.
Russo-Chinese Bank; Russian.

In addition to the above-named banks, there are about 50 others with smaller capital situated in Hiogo (Kobé) and Osaka.

CABLE LINES.

Cable lines under the control of the Japanese Government connect with the Eastern Cable Company and overland lines to Europe, through China, India, and Siberia; also with the telegraph lines in China.

OCEAN FREIGHT AND MAIL FACILITIES.

Japan joined the International Postal Union several years ago and is entitled to credit for the degree of efficiency attained in handling foreign mail matter.

The steamship mail service is all that can be desired, and is being rapidly developed by the addition of other vessels to the old lines and by the replacing of the old and slow boats by new and fast ones.

New lines of communication, also, have been started to the United States and to Europe during 1898, one to the United States being a freight line, named the California and Oriental Steamship Company, with terminal at San Diego, Cal., via Yokohama and Honolulu, connecting with the Atchison, Topeka, and Santa Fé Railroad system; and the other being the Toyo Kisen Kaisha (Oriental Steamship Company), which owns three fast mail boats and now runs in conjunction with the Pacific Mail and Occidental and Oriental Steamship companies to San Francisco, Cal.

The average time between Japanese ports and the United States is now about fifteen days, and between Japan and various European countries forty days. As the whole world is now struggling for commercial supremacy in the East, the proximity of the United States to this trade should not be overlooked by American manufacturers.

SAMUEL S. LYON,
Consul.

HIOGO, *March 7, 1899.*

NAGASAKI.

POPULATION.

The total population of this consular district, as near as it can be ascertained, is between 8,000,000 and 10,000,000. The percentage of illiterates is very small; the people have mechanical traits and can become producers of paper.

CONSUMPTION.

Japanese use paper for ordinary business and domestic purposes; also for covering the sliding partitions and windows in their houses. The quality is mostly of the cheapest, the better classes being used to but a small extent. The sizes and weights differ largely; according to the purpose for which they are used; the lightest is, however, almost exclusively employed, the heavier weights being used by printers. The cost of the cheapest is 2 sen (1 cent) per 100 sheets, about 8 by 10 inches. It is peddled through the streets by coolies, and is also sold by native storekeepers at their stalls. The terms of sale are cash. It is impossible to learn the quantities consumed and the value of same.

The number of newspapers is, I am informed, 15; all are dailies and each office employs from 10 to 30 printers and helpers.

The chief articles manufactured of paper are kites, toys, etc. It is impossible to estimate the amount used, but it is very large.

The consumption will probably increase with the growth of population. Modern building methods will interfere to some extent with the use of paper, as glass will take the place of paper in doors and windows. Japanese dominate the trade.

PRODUCTION.

There are a great many mountain streams that develop small water power, which is now used in a very primitive way for rice mills.

Coal can be had in any part of the district at from $3 to $4 per ton.

The raw materials for making paper are the mulberry tree, rice straw, and rags. There are quantities of rice straw available. It is impossible to learn the number of mulberry trees; I suppose they are practically unlimited, as they grow in the mountain districts. It is also impossible to learn the cost of the raw material.

The machinery generally used for making paper is most primitive. Labor is very cheap. I am informed that many families make the paper used by them by putting rice straw into a mortar with water and pounding it. When it reaches the pulp state, a little glue or rice is added; the mixture is then spread between boards or rollers, after being thinned, and is dried in the sun.

There are two paper mills in this district—one at Kokura, the other at Yatsushiro. The last named is called the Toki Paper Company. It has two New York paper-making machines, turns out 10 tons of paper every twenty-four hours, employs 150 hands, and makes white news and white wrapping paper. The works are built of wood and stone. It employs no foreigners and uses straw pulp mostly, although a few rags are also used. There are two boilers for generating steam to dry the paper on the rollers. The machinery is moved by water power, and the plant is equipped with an electric-lighting apparatus. The main office of the company is No. 10 Shin Yamachi, Kumamoto. The company was established in July, 1898, with a capital of 1,000,000 yen ($498,000). There are said to be so many quotations for the Toki mill paper that they would be useless for information.

The other mill, at Kokura, is called the Senguseishi Kabushiki Kaisha. It has a very large capital and an output of 20 tons per day, employs 3 British subjects and 500 laborers, has 7 boilers, runs by steam power 2 paper machines, has 5 or 6 brick buildings, and uses rags and pulp, the latter being imported. I am unable to learn the price paid for the pulp, but rags cost 2.25 yen per picul ($1.24 per 133⅓ pounds) for cotton and 2.55 yen ($1.26) for linen. This mill makes news paper only.

There is also a flourishing industry in handmade paper at Fukushima; wrapping, Japanese letter, and tissue paper are manufactured, and no machinery is used.

FOREIGN PAPER.

I am informed that some of the Japanese newspaper publishers do not use the local product; they employ the German, which, they claim, is more suitable, as well as cheaper, being thinner, lighter, more easily handled, and better made.

The paper imported into and exported from this consular district is so small in quantity that it is not worth mentioning.

BANKING, MAIL, AND TRANSPORTATION FACILITIES.

The banking facilities with all countries from which paper is or is likely to be imported are good, as are the mail and telegraphic facilities. The method of transportation from all countries to Japan is by water, by regular and "tramp" steamers, and by sailing vessels.

OUTLOOK FOR AMERICAN PAPER.

I see no reason why the paper manufacturers of the United States can not sell printing paper in Japan, if they solicit orders in the manner adopted by other foreign exporters.

CHARLES B. HARRIS,
Consul.

NAGASAKI, *May 12, 1899.*

YOKOHAMA.

IMPORTS.

During the latter part of the year 1898, in consequence of the increased import tariff taking effect January 1, 1899, unusually large purchases of foreign paper were made, and the market became, and is still, overstocked, the prices for common news or printing paper now being about 5 sen (2.49 cents) per pound, while mechanical-ground pine pulp is selling for about 3 sen (1.49 cents) per pound. Dealers inform me that there will be no improvement in prices here until stocks are worked off. Statistics just published by the Japanese customs authorities furnish me with the following values of imports of printing paper:

1896	$361,718
1897	428,478
1898	1,141,607

Of this there came from—

United States	$443,302
Germany	302,863
Great Britain	225,699
Belgium	97,397
Austria	69,604

Several complaints affecting large shipments of American printing paper have been brought to my notice, and have formed the basis of claims and surveys. Improper covering and variance from orders in the matter of weights are the principal shortcomings alleged in these cases.

About 15 mills are now in operation in Japan, turning out this grade of paper at 5 sen (2.49 cents) per pound and a better grade for book printing at about 8½ sen (4.233 cents) per pound. These concerns are insufficient to supply the domestic demand, but their prices have to be competed with. New mills are being erected, and paper-making machinery has been imported (nearly all from the United States and Great Britain, in about equal quantities from each) to the value of $87,312 in 1896, $376,997 in 1897, and $25,168 in 1898.

During the year 1898, there were imported—almost exclusively from Germany—match papers valued at $87,596; glazed fancy paper, at $96,639; and packing paper, at $115,399.

Pulp imports show an increase in values from $17,750 in 1896 to $31,893 in 1897 and to $111,799 in 1898. In the last-named figures, Germany participated to the extent of $52,468; Sweden and Norway, $35,095; and the United States, $15,499. The importation of this article must steadily increase, owing to the growing scarcity of timber in Japan.

The present Japanese import tariff is as follows:

Albums, blank books, and printed forms, 15 per cent ad valorem.

Chinese paper and hanging paper, 15 per cent ad valorem.

Printing paper, not exceeding 24 pounds per ream of 500 sheets and measuring not less than 1,086 square inches per sheet, 80 sen per 100 kin (39.84 cents per 132.51 pounds).

Other printing paper, 1.163 yen per 100 kin (57.9 cents per 132.51 pounds).

All other kinds of paper, 10 per cent ad valorem.

Strawboard, 15 per cent ad valorem.

EXPORTS.

"Gampie" (tissue or stenciling paper) was exported in 1898 to the value of $138,924, of which $68,659 worth went to the United States and $43,054 to Great Britain.

"Usuyo" (copying paper) was exported to the value of $58,197, of which $29,659 worth went to the United States and $14,710 to Great Britain.

Wall paper was exported to the value of $92,103, nearly all going to Great Britain.

Paper napkins were exported to the value of $59,917, nearly all to the United States.

Paper lanterns were exported to the value of $46,029, of which $26,168 worth went to the United States.

Fans to the value of $249,616 were exported, the share of the United States being $104,235, that of Hongkong and China $76,109, and that of France $25,889.

Miscellaneous manufactures of paper were exported to the value of $126,111.

Rags were exported—almost exclusively to the United States—to the value of $103,757.

PRODUCTION AND CONSUMPTION.

I am informed that the factories now in operation in Japan produce annually about 40,000,000 pounds of printing and book papers, of which some 20,000,000 pounds are the output of the Fuji Paper

Mill alone. An estimate of the annual production of handmade native paper is impossible. With the rapid extension of education and commerce among an intelligent and progressive population of 43,000,000, it is evident that the consumption of paper must assume large proportions.

OUTLOOK FOR AMERICAN TRADE.

The only obstacles to the opening of a good market for the American article here are, first, price, and second, careless packing and inattention to details of orders.

The following-named firms at Yokohama will, I believe, cheerfully furnish practical information to our manufacturers: The American Trading Company, the China and Japan Trading Company, Messrs. Walsh, Hall & Co., Messrs. Frazer & Co. (all American), and Messrs. Berrick Brothers (British), and the Mitsui Bussan Kaisha (Japanese).

JOHN F. GOWEY,
Consul-General.

YOKOHAMA, *May 11, 1899.*

KOREA.

POPULATION.

The total population of Korea is variously estimated at between 8,000,000 and 16,000,000; 12,000,000 is probably approximately correct. The percentage of illiterates is great, probably not less than 60 per cent.

CONSUMPTION.

The people have mechanical traits. They have manufactured paper and used printing presses for centuries.

Paper is employed for windows, walls (either as wall paper or pasted over latticework), floors, rain hats, rain coats, chair covers, purses, and innumerable similar articles, string, umbrellas, fans, etc., besides the ordinary uses for writing and printing.

The construction of the Korean houses makes tough, parchment-like paper indispensable. The paper used in Korea at present is almost exclusively that of native manufacture, with some foreign writing paper finding its way into employment.

Paper is made by hand in the open air. There are no large factories, and no statistics as to production and consumption are available. Korean paper is prized in China and Japan, but it is costly and not much is made, except to supply the local demand.

There are but few publications in Korea. Four or five daily newspapers have been started during the past year, and 5 printing offices under foreign supervision. I believe the supplies for these offices come mostly from Japan. The names of the chief offices are as follows: The Seoul Independent office; the Trilingual Press, and the English Church Mission Press, all in Seoul. The other offices use only the Japanese and Korean languages.

The principal articles manufactured from paper are a thick sort of oilcloth (paper) for the floors and a tough oil paper for rain coats, hats, and umbrellas.

The consumption of foreign writing paper and paper for printing offices will increase.

WATER POWER, TRANSPORTATION, AND FUEL.

Korea is a very mountainous country. Undeveloped water power is plentiful, but the winters are very severe. There are numerous water ways in Korea that are navigable for small craft. The first railway is not yet completed, though under construction.

Transportation is effected by man or pony back at present, except where water is available.

Very little water power is developed for use in Korea.

Fuel is scarce at present, though there are good and ample coal deposits in the country. Poor soft coal costs now $8 gold per ton, chiefly owing to cost of transportation from Japan.

PRODUCTION.

Paper is principally made from the bark of a species of mulberry tree (*Broussonetai papyrifera*) which grows rapidly in Korea.

The method of making it is as follows:

The bark of the mulberry is soaked in river water, mixed with wood ashes, in a wooden vat, out of doors, until it becomes a grayish mass. At the proper time, an inclined board is placed with one end over this vat and a ladleful of the mass is spread evenly over a bamboo mat laid on the board; this mat is then reversed by a dexterous motion and the thin layer of pulp spread on the board, from which it is separated by a straw at either end. A boy then places a straw or a long slender reed on top of this layer of pulp, at either end; another ladleful of the mass is spread on the mat, drained, and placed on top of the first one; and so on.

The thickness of the sheet of paper depends upon the amount of pulp placed on the mat, and upon the addition of rice starch to the pulp.

After this pile has drained sufficiently, the layers are removed one by one by means of the straws or reeds, and placed in the sun to dry. When dried and bleached sufficiently, they are taken to a room with a hot paper floor and ironed smooth by hand.

IMPORTS AND DUTY.

Imported paper reaches Korea chiefly from Japan and China. It is made in these countries or imported from America and Europe.

The import duty on paper coming into Korea is 7 per cent ad valorem.

The import of paper into Korea for the year 1897 amounted to less than 20,000 yen ($10,000 gold).

BANKING, POSTAL, AND CABLE FACILITIES.

Banking facilities in Korea are adequate. In addition to a branch of the Hongkong and Shanghai Banking Corporation of New York, Europe, and the East, there are several Japanese branch banks doing business here.

Korea is a member of the International Postal Union, but has not yet established a foreign mail service. The Japanese postal department serves Korea at present, having branch post-offices in each port.

At least three months are required for a reply to a letter to or from New York. Korea has cable connection with Japan, and is connected with China by land lines. Rates from Seoul to Washington are 3.48 yen ($1.74) per word.

OPENING FOR AMERICAN TRADE.

I do not see any good opening for the introduction of American paper into Korea at present. I have discussed the matter with the managers of the Independent and the Trilingual Press, at Seoul, who inform me that American paper is better suited to this market than is that made in England. One of the managers, a practical printer in the employ of the American Methodist mission, tells me that Seoul offers a fair opening for a practical printer and bookbinder, with $3,000 capital, to start a job office. He says that he could make a good living and a fair interest on his investment. Such an enterprise would be likely to make an opening for American paper manufactures in Korea.

I do not think there is an opening in Korea for wood pulp or other fibers.

FREIGHT RATES.

Shipments from New York to Korea are usually via Kobé, Japan, or Shanghai, China, per direct steamer through the Suez Canal. Freight rates to Kobé via Suez are about $13 per ton measurement; $11.50 per ton weight. From Chicago to Kobé via the Pacific, the rate is $12 per 40 cubic feet, but not under 1⅓ cents per pound for general merchandise. To the above must be added $4 per ton from Kobé to Chemulpo, Korea. The time from New York to Chemulpo is nine to ten weeks via Suez. It is shorter, of course, by the Pacific, but delays are very frequent.

HORACE N. ALLEN,
Consul-General.

SEOUL, *January 31, 1899.*

PERSIA.

PAPER MANUFACTURE IN THE MIDDLE AGES.

The manufacture of paper has, in common with many other necessary and useful industries in Persia, almost ceased to exist. The causes for this are manifold, and lie rather in the national character than in the unequal contest which primitive methods and slow processes have to wage with the superior contrivances of more enlightened and progressive centers of enterprise.

It would be impossible to fix any approximate date when paper was invented or first introduced into Persia. There can be no doubt, however, that it was in general use far back in the middle ages of European history. It aided the intellectual activity, which reached its highest development in the twelfth and thirteenth centuries of the Christian era, and produced the great classical works of the Persian tongue. The encouragement and support given by kings and governors, both in Persia and Turkestan, to writers of distinguished merit with genius for extravagant and picturesque flattery created at that epoch a proportionately wide and intelligent reading public. This provided a stimulus for the manufacture of paper of a high and enduring quality. This was a necessity of the case and times; for in default of printing, the works were issued in manuscript, and transcribers, with certain qualifications, commanded considerable remuneration.

The paper of the older manuscripts is glossy, close in texture, and as enduring as vellum or parchment. It was made from the raw material—cotton, flax, or some other of the fibrous plants which are found in certain parts of Persia. It does not appear from the writings of native authors by what processes the finest and best qualities were produced, or what was the extent and value of the commerce. In view of the fact that the Persian language and literature were diffused throughout Tartary and India, through large territories now under the rule of Russia and Turkey, the manufacture and trade must have been, during long periods of history, of great extent and importance. Persian historians, from various motives, rarely condescend to trace the rise or fall of any of the national industries; consequently, no notice is taken of the decline and ultimate disappearance of a very important branch of trade. At the present time, nothing is made but a species of the roughest and poorest description, used only for wrapping.

POPULATION.

All statistical reports relating to population, to manufactures, trade, industries, natural resources, exports and imports, revenue and expenditure of this country are, from their incompleteness, unreliable and misleading, whether compiled by Persians or foreigners.

The population of Persia at the present time is probably from 12,000,000 to 15,000,000, 90 per cent of whom are illiterates. Considerable mechanical and artistic skill is developed by the artisan class, although, from the absence of sympathetic and generous support, not to the same extent as in the past.

CONSUMPTION.

The only special use to which paper (waste paper) is applied in Persia is in the preparation of a kind of papier-maché for making pen cases, book covers, and a few other ornamental articles. Beyond this, paper is used for book making, newspapers, accounts, and the ordinary correspondence of the people.

The kinds of paper sold in the bazaars consist of foolscap, quarto, and octavo, the two latter invariably thin, of light weight. The foolscap is not generally glazed and is of inferior quality. For books, either folio or quarto is generally used, though school books of a smaller size are sometimes printed. The paper used for the newspapers, of which there are only 4 or 5 published in the country, measures 20 by 13½ inches, and 18 by 7¼ inches.* Many of the works of classical authors are published in Bombay, and these are in every respect superior to those printed in Persia.

The actual quantity of paper consumed in the country is unknown. The English consuls provide some statistics under the head of stationery; but those cover only a portion, though a comparatively large one, of the country. Moreover, their estimates include envelopes, account books, and writing materials. No other even approximate record is kept.

The terms of sale between the wholesale trader and the retail dealer are generally for long or short credit, the retailer reserving the option of discounting his bills at any time within the prescribed date.

The consumption of paper in Persia is too small for any mercantile firm or company to be induced to make it the sole object of its operations. It represents a small part of the imported goods of nearly every native merchant.†

There are four or five newspapers published in this country, at intervals of a fortnight or more. The number of books published in

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* The page.

† See appendix to this report.

Persia, or in Persian, must be considerable; but the exact figure is unknown. The designation of publisher is a misnomer in this country, unless the writer who pays for the printing of his own books comes under that denomination. Every man who writes a book, if he wishes to bring it before the public, has to undertake the whole cost of printing and binding. Original authorship, however, like paper making, is at the present time an almost extinct art in Persia. A few translations of foreign books are made, but neither the number nor importance is great.

The increase in the consumption of paper in Persia depends upon such a variety of circumstances and conditions that it is impossible to forecast the future with any degree of certainty. The increase of trade or of educational facilities, the development of the resources of the country, and the establishment of manufacturing industries would all have a quickening effect on this particular branch of commerce; but so far, no herald has announced their appearance.

Most of the note paper is of French manufacture, whether imported from England, India, or Constantinople; but that used for publishing purposes is a Russian article. The paper used for firmans, contracts, deeds, wills, and documents of a character needing durability is made in Cashmere, and has taken the place of the old Persian product.

PRICES.

As the trade in paper is almost entirely in the hands of natives, the price depends on the knowledge or ignorance of the parties to the bargain. The dealer always asks considerable in excess of what he is prepared to take, whether the quantity be large or small, and if the purchaser is ignorant of the trick he falls an easy victim. Plausibility and a liberal use of solemn oaths are the principal articles of the trader's creed. The general practice for natives, however, is to add 50 per cent to the original cost price for transport expenses and profit. Foreigners in nearly all mercantile transactions add upwards of 100 per cent to the manufacturer's price.

BANKING, TELEGRAPHIC, AND POSTAL FACILITIES.

The facilities for financial operations between Persia and most foreign countries are good at present. The Imperial Bank of Persia is an English institution, with the head office and principal sphere of business in Teheran, but with branches at all the cities and towns of any importance throughout the country. It has, besides, its board of management and controlling offices in London, and correspondents in most of the chief centers of trade throughout the world. The Bank de Préto and the Commercial Bank, both Russian, provide certain facilities for financial connections with Russia, and also with countries farther west.

Telegraphic and postal communication is fairly regular and expeditious to all countries, both east and west.

All imports and exports, regulated by treaty, pay an invariable duty of 5 per cent. When the foreign merchant has paid his import dues, he receives a pass which frees his goods from all further tolls or taxes, wherever he may send them. Persian merchants, however, do not have the benefit of this regulation. Their goods are not only subject to the import, but have to pay octroi or internal duties as well.

OUTLOOK FOR AMERICAN TRADE.

For the information of American merchants generally, I may state that the method now adopted by many firms of European reputation for extending and building up their trade in Persia is by a system of consignments to well-known foreign houses and agents, who dispose of the goods at market prices; and when the lots are cleared off, send accounts with remittances. The commission usually charged is from 5 to 10 per cent. If United States merchants can not see their way to do business on these conditions, they might send samples of their goods and instruct agents to obtain orders on favorable conditions. Taking into consideration the superiority of American manufactures over those which generally stock the Persian bazaars, I do not see why they should not compete on favorable terms with their European rivals. In the absence of direct shipping communication with the Persian Gulf, it would be better to forward directly to Bombay or Karachi, where goods could be reshipped to any of the gulf ports with very little expense or delay.

TRANSPORTATION.

All imports and exports, as well as the natural and artificial productions of the country, are transported from place to place by means of pack animals. The only exception to this method is the use made of the Karoon River for about 100 miles northward from its confluence with the estuary of the Tigris and Euphrates. Two small steamers, one belonging to an English firm located at Bagdad (Messrs. Stephen Lynch & Co.) and the other the property of the Persian Government, navigate the river as far as the town of Shooster (ancient Shushan). The former of the two steamers navigates the lower and the latter the upper reaches of the river. Although this stream was declared an open water way to all countries in 1889, the only advantage taken of its facilities for transport is the small service mentioned above. In ancient times, and especially during the rule of the Sassanian dynasty in Persia, the water was largely used for irrigation, and the alluvial soil covering a wide area of surface produced abundant crops of sugar cane, cotton, and grain, When, however, the famous dam which raised the water to the level of the land was partially destroyed and the water returned to its original channel, the cultivation had to be abandoned.

Some attempt is being made at the present time to improve and reopen the road between the Karoon and Ispahan, to be used at least as a caravan route, and thus shorten the time and diminish the expense of transport between the Persian Gulf and the central and the northern central markets. So long as Russia imposes a prohibitive transit duty on all goods but her own for the Persian trade, the southern route seems the best for the introduction of foreign merchandise, even as far north as Teheran.

The average cost of transport is about 12 cents a ton per mile, and the distance from Bushire to Teheran is generally estimated to be 800 miles. Caravans of mules, camels, horses, and asses ordinarily travel about 16 or 20 miles a day, taking one or two days' rest at each large town en route.

ARTHUR S. HARDY,
Consul-General.

TEHERAN, *February 2, 1899.*

APPENDIX.

There are no firms, either foreign or native, which make stationery the sole articles of their trade. Most of the paper for postal purposes, consisting of the quarto and octavo, is brought from Constantinople for the Teheran market, and nearly all by native traders.

If paper manufacturers desire to communicate with dealers in Persia with the object of trading, they can rely upon the following as men of business and straightforward traders:

Messrs. Zeigler & Co., Teheran.
Messrs. J. P. Hotz & Son, Teheran.
The manager of the Toko, Teheran.
The manager of the Comptoir Francaise, Teheran.
Hajie Mohammad Ismail, Timeha Sadr Azem.

The latter is a native.

The total imports of stationery, according to English consular reports, appear at the value of $30,505. These, however, do not cover the whole country, and the figure which would be near the mark would be about $50,000. The ordinary rough material, of home manufacture, probably amounts to about $5,000, making a total consumption of $55,000.

No books or publications of any kind exist on the trade of paper making. The people engaged in all kinds of handicraft are nearly all illiterate. This, however, would not make any difference regarding an organ to represent trade interests, for those who carry on any craft would not divulge the secrets of their trade.

SIBERIA.

POPULATION.

The total population of the Amur territory and south maritime province, including Vladivostock, Nikolaefsk, Blagovestchinsk, and Habarofsk, and excluding the northern part of the province, is estimated at about 797,000, divided as follows: Army regulars, 600,000; Russians in cities, 75,000; Russians in the country, 22,000; Asiatics, 100,000. The illiterates represent from 75 to 80 per cent. The people have mechanical traits, but are not likely to become competitors in this line of industry.

CONSUMPTION.

Paper is employed for business purposes. There are no special industries requiring it. Middle-class printing paper, costing from $1 to $1.25 per ream, is used the most. I believe that the ordinary terms of credit, etc., are given. The quantity employed yearly is perhaps 30,000 reams, 500 sheets in each, valued at $37,500. Stationery is consumed to the value of $12,500, and news paper $2,500, or some 10,000 reams.

Kunst & Albers, in Vladivostock, are brokers for Russian and German houses.

There are 6 newspapers—3 in Vladivostock, 1 in Habarofsk, and 2 in Blagovestchinsk. The printers number from 15 to 20, and the publishers 6. The Government offices are large consumers. Nothing is manufactured from paper here. The consumption is likely to increase. Russia controls the trade; next in importance come Germany and Japan.

PRODUCTION.

There is plenty of water accessible from the railway and from steamers; and very good material for paper exists. Land could be secured near the water's edge with all the material near at hand, and a company could easily be organized. No water power has been developed.

Wood and coal (mostly anthracite) are available for fuel; the cost is moderate and transport facilities by water and rail are good.

Raw materials comprise hackmatack, fir, spruce, cedar, grasses, rags, and waste. There are very few grasses, a moderate supply of waste, and plenty of rags; of the trees, spruce abounds. There is no machinery for paper making. The cheapest kind of labor—Chinese and Korean—is available.

BANKS, MAILS, TRANSPORTATION, AND IMPORTS.

The middle class of writing paper, costing from $1 to $1.38 per ream, is imported, mainly from Russia; wrapping paper comes from Japan. Banking facilities are good. There is at present no duty on this class of goods. Transport by water from Odessa takes forty to forty-five days; overland from Moscow or St. Petersburg, thirty to thirty-five days. Mail from Japan takes three to six days. There are good telegraphic facilities. In 1896, writing paper was imported as follows: From Russia, 6,512 poods (235,161 pounds); from other countries, 9,832 poods (355,053 pounds). In 1897, the figures were: From Russia, 2,397 poods (86,560 pounds); from other countries, 13,757 poods (495,774 pounds).

OUTLOOK FOR AMERICAN TRADE.

There is a good opening for our paper, if properly introduced. I consider Mr. V. A. Pahoff, the editor of the Dalny Vostock newspaper, who uses the largest quantity here, a reliable man to communicate with. He buys from Germany now, through Kunst & Albers, but might take an agency. Mr. Jules Bryner* is well informed as to resources, facilities, etc. Our exporters should maintain a general agency here and provide every facility for American merchants to make their goods known throughout eastern Siberia. A competent interpreter and a clerical force should be employed, and a sample room opened where American goods could be stored and displayed.

RICHARD T. GREENER,
Commercial Agent.

VLADIVOSTOCK, *March 25, 1899.*

TURKEY IN ASIA.

BEIRUT.

Beirut and Damascus, the leading cities of Syria, have a population of some 350,000, about 40 per cent of whom are illiterate. The Syrians possess no pronounced mechanical traits, but are good imitators. This was manifested by the establishment some fifteen years ago of a paper mill at Ant-Elias, some 7 miles out of Beirut. While this mill was in operation, the importation of foreign paper to Syria decreased very materially. The machinery was imported from Europe. Rags from Egypt and Syria formed the principal raw material, while French and English coal (bricks or briquettes, now worth $8 per ton) was used as fuel. The skilled labor was paid at the rate of about 85 cents per day, while girls for assorting rags received 10 cents. The Ant-Elias mill stopped six years ago, in consequence of dissensions between the managers. No paper or pulp mill exists in Syria to-day, nor is there any prospect of such factories being started in the near future.

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*Bryner, Kosnitzkoff & Co.

CONSUMPTION.

Paper is used here principally for printing, packing, and general stationery; also for the making of account books and for the manufacture of cigarettes. A large dealer in Austrian paper puts the annual importation of paper into Beirut at 600,000 kilograms (1,320,000 pounds), representing a cash value of less than $50,000, the average price per pound being 1 piaster (3½ cents). I consider this estimate, however, entirely too low. Beirut supplies perhaps two-thirds of Syria. There are 16 Arabic newspapers in Beirut, but their circulation is not large. The total number of printing establishments is about 25. The American Mission Press printed last year 28,085,564 pages and issued 198,000 copies of publications of all kinds. It has 672 distinct books on its catalogue and keeps a good supply of each publication. L'Imprimerie Catholique does a similarly large business. For newspapers, cheap wood-pulp paper, procured from Austria and Italy, is mainly used, while much of the book paper consumed comes from Fiume, Austria. France, Italy, England, Austria, and America supply the local market with general stationery.

Paper is generally bought through commission agents, on three to six months' credit, 4 to 6 per cent discount for cash. The Imperial Ottoman Bank, Heald & Co., and other banking houses buy and sell drafts on the capitals of Europe. The leading brokers are Weber & Co., August Duplau & Co., F. Leitie & Co., E. Luttiche & Co., Speich & Yared, Bucher & Co., and F. Wehner.

The consumption of paper in Syria is rapidly increasing, with the social and educational advancement of the people.

DUTIES AND TRANSPORTATION.

The uniform customs duty in importations is 8 per cent ad valorem, while 1 per cent is levied on exports.

Regular lines of French, Austrian, Russian, English, and Turkish steamers touch at Syrian ports at short intervals. The time occupied between here and London is eight to ten days. Beirut enjoys first-class telegraphic facilities. It is generally accepted that 10 to 12 per cent must be added to manufacturers' price on paper to defray expenses (transportation, customs duties, etc.) to the workshops in Beirut.

UNITED STATES TRADE.

The manager of the American press recently ordered 132 reams of book paper from the United States, and expects hereafter to use American paper extensively. If American manufacturers can furnish certain grades of paper in successful competition with Austria and Italy, as shown by this trial, in spite of unfavorable transportation conditions, the prospects are certainly bright for future business. I can not doubt that the principal levantine ports will soon be favored with regular direct steamship connections with the United States.* A native agent has solicited and received a number of orders for American paper, but I do not know if the order will be executed. All leading countries except the United States are represented here by resident agents, selling paper on commission. They also send commercial travelers to this market with samples and price lists.

G. Bie Ravndal,
Consul.

Beirut, *February 27, 1899.*

JERUSALEM.

In the paper industry, this country is several centuries behind the times, and it is improbable that the best report I can make will be of any service to those proposing the questions contained in the circular.

Without direct communication with the United States,* our merchants can not compete here successfully with those of other countries in the matter of paper or of any other commodity; still, if American stores were opened in Jerusalem and other large towns of Palestine, as was proposed in my annual report of September 26, 1898,† American paper would soon, because of its excellent qualities, commend itself to foreign residents; but the sales would for a time be extremely limited.

No paper is manufactured in this country, and any attempt of the kind would be foolish. There exist no trees, grasses, or other raw materials, with the single exception of a small quantity of rags, that could be used for the purpose. Straw exists, of course.

Some rags are exported every year, the total value amounting to only a few thousand dollars.

The kinds of paper used here are writing, book, printing, wrapping, and pasteboard—all of inferior qualities. The qualities are, however, as good as are demanded. For choice kinds of writing paper, most foreign residents import their own.

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* Note by the Bureau of Foreign Commerce.—This service has been established since the date of the above report. See Consular Reports No. 224 (May, 1899); Advance Sheets No. 376 (March 17, 1889).

† See Commercial Relations, 1898, Vol. I.

Paper comes chiefly from Austria; some also from Germany, France, and England. Only a limited amount is brought into the country, and statistics as to the exact quantity and value are not available.

Paper has no market price, and is, in this respect, like every other commodity sold in this country.

It is kept for sale in a dozen or more small shops, but generally as one article in a miscellaneous lot of merchandise.

No newspaper is published in Jerusalem or Palestine, none being allowed by the Turkish Government.

There is a little better showing in the matter of printing presses, there being 12 or 15 establishments of this kind, if we are allowed to call a small hand press and one workman an "establishment," and the number of persons employed in connection with them amounts to 130 or upwards. With a single exception—that in the Latin convent—the presses are all worked by hand. All the large religious bodies here have printing presses, the Armenian being the oldest. Besides the Latins and Armenians, the Greeks, the London Society for Propagating Christianity Amongst the Jews, the Church Missionary Society (English), and the Jews have their own presses. Of Jewish establishments, there are 8 or 10, all small, the largest employing 8 men. These presses turn out chiefly school and religious books, although the Latins print some costly lexicons in Arabic and Italian, Arabic and French, and in some other languages. The languages in which printing is done in Jerusalem are English, French, Italian, German, Spanish, Hebrew, Russian, Turkish, Arabic, Armenian, Greek, and Latin; possibly, the list is not complete.

The population of Jerusalem is not far from 50,000.

SELAH MERRILL,
Consul.

JERUSALEM, *January 9, 1899.*

SIVAS.

POPULATION.

There has been no census of the population of this consular district. I estimate the number of inhabitants to be about 2,000,000. It appears that 87 per cent are illiterate. The people are lacking in mechanical traits and produce almost nothing of a manufactured nature, except handmade carpets and cloth.

CONSUMPTION.

Paper is used for cigarettes, writing, and wrapping. Cigarette paper represents about 60 per cent of the whole amount consumed. It is manufactured in France, cut and made into packages at Constantinople. The package covers are made and printed in Austria. About 30 per cent of the paper is for writing. It is of two classes—thin, fine, cross ruled for Armenian writing, and heavier, unruled for Turkish writing. The former embraces most of the commercial writing and the latter the Government writing paper. The remainder of that consumed is for wrapping, pasting over windows in place of glass in winter, etc. A small amount (perhaps 0.2 per cent) is used for the three weekly official newspapers. No other printing is permitted in the district. As the Koran is printed or written on paper, the use of paper for sanitary purposes is strictly forbidden.

The terms were formerly thirty to ninety-one days' credit at Constantinople, but since the disturbances of the last few years business is conducted largely on a cash basis.

It is estimated that $800,000 worth of all sorts of paper is annually imported into this consular district.

There are no paper firms, companies, or brokers of any importance in this district, but numerous merchants buy and retail paper, together with other goods.

No paper pulp is used. The consumption of paper is not likely to increase in the near future.

France supplies all the cigarette paper, which is the most important item. Austria supplies practically all the rest of the paper used.

WATER AND RAILWAY TRANSPORTATION.

There is a considerable amount of water power, most of which is undeveloped. There are no navigable water ways. The trading port is Samsoun, on the Black Sea, twelve days' journey from Sivas. The nearest railroad terminus is at Angora, eighteen to twenty days' journey from Sivas. The trains on the Angora Railroad do not travel at night, and two days are required for the trip from Constantinople to Angora.

FUEL AND RAW MATERIAL.

Cow manure is the chief fuel. Wood is scarce and very dear in the towns. No coal is mined or imported. So far as I can learn, there are no forests of trees or any vegetable fibers suitable for making paper anywhere in this district, except wheat and barley straw. No rags are collected for export. Clothes are worn almost to the last shred.

There are no facilities for making paper machinery.

BANKS, MAILS, TELEGRAPHS, AND IMPORTS.

There is a branch of the Imperal Ottoman Bank at Samsoun and one at Angora. No other regular banking facilities exist. The import duty is 8 per cent ad valorem. There is one post daily on the Angora Railroad, and four or five posts a week by steamer at Samsoun; also one a week to most of the towns of the interior. This is carried by wagon, horse, or camel. There is no fixed tariff for transportation. The telegraph facilities are sufficient for the cities, but messages are slow and subject to Government inspection. No code words are permitted.

Import statistics are not procurable. The estimated valuation of the annual import—$800,000—was obtained by consulting various merchants.

OUTLOOK FOR AMERICAN TRADE.

It would appear that the United States might reasonably expect to share in the paper trade of this country. Paper should be laid down at Constantinople or at Samsoun, and might be sold from there for cash on delivery, if prices could be made profitable to the small dealers. The United States, to build up its export trade in paper to this country, should foster the merchant-marine service, and direct steamship communication with Constantinople and Samsoun should be established.*

M. A. Jewett,
Consul.

Sivas, *February 4, 1899.*

SMYRNA.

POPULATION.

The estimated population of this city is 300,000. Illiteracy prevails to the extent of 75 to 80 per cent. The people seem to give the preference to trading and shopkeeping, and neglect mechanical or industrial pursuits.

CONSUMPTION.

The different uses of paper are for writing, printing, wall advertisements, newspapers, wrapping, cigarette, pasteboard for boxes, bags, etc. Wall paper and different kinds of fancy papers are also employed.

The industries using paper and pasteboard are bookbinding and the manufacture of boxes and bags and some other articles of minor importance.

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* See footnote, p. 420.

The different kinds of paper in use at present are: Writing, fine and fancy; wrapping, printing, cigarette, and pasteboard.

The writing paper must be for general use, with gloss and lines; qualities, medium and common; color, white; sizes, quarto and octavo. The wrapping paper imported is of different qualities, generally brown, blue, and gray; size, 14.17 by 37.79 inches. Printing paper for books and newspapers of usual quality is without gloss and white in color. Wall-advertisement paper of different colors is used with and without gloss; sizes, 22 by 29.13 inches and 25.2 by 43.3 inches. There is also printing paper of fine quality for commercial uses, such as bills of exchange, accounts, circulars, etc. Cigarette paper of different qualities—only in white—is used. Pasteboard comes in different qualities and colors; size, 12.6 by 33 inches.

The average yearly quantities consumed and their values are:

Description.	Quantity.	Value.
Fine writing and fancy paper............pounds...	1,760,000	$96,500
Wrapping paper............do......	2,200,000	48,250
Printing paper............do......	1,100,000	34,740
Printing paper for wall advertisements............do......	660,000	27,020
Wall paper............	(*)	15,440
Pasteboard ....pounds...	1,650,000	28,950
Cigarette paper............reams...	200,000	154,400

* Weight unknown.

The total number of paper merchants is 18 to 20. The principal ones are Athauassula frères, Spiro Athauassula, Orosdi Back & Co., and Nic. Placotaris, all of Smyrna. The total number of newspapers is 15. There are 10 or 12 printing establishments.

The consumption of paper is increasing from year to year. The trade is in the hands of Greek merchants. There are no paper or pasteboard mills in this city.

PRICES.

The average prices of the different classes imported are as follows:

Fine writing and fancy paper............	per 220 pounds...	$9.65	to	$15.44
Wrapping paper............	do......	3.47	to	7.72
Printing paper............	do......	6.75	to	7.72
Paper for wall advertisements............	do......	8.68	to	9.65
Pasteboard	do......	2.89	to	3.86
Cigarette paper............	per ream...	.68	to	.97

The different kinds of paper are sold to retailers on six months' credit or discount for cash.

IMPORTS.

The share of the different countries in the total imports of paper into this city is approximately as follows:

	Per cent.
Austria	60
Germany	20
France	10
Italy	10

The manufacturers of paper generally grant to the importers three or four months' credit.

There are no exports of paper from this city, all varieties being imported for local consumption.

RUFUS W. LANE,
Consul.

SMYRNA, *January 26, 1899.*

AFRICA.

EGYPT.

POPULATION.

The population of Egypt was, according to the census of 1897, 9,734,405. That census having been taken so recently, the present population is about the same. The percentage of illiterates is 91. The people have no mechanical traits which would enable them to become producers of paper.

CONSUMPTION.

The principal uses of paper in Egypt are for writing, printing, packing, and cigarette making. The latter is the only industry of the country requiring paper. Nearly all classes or kinds of paper are used at present. There are no special requirements as to quality, weight, size, etc. The market prices for each class or kind are based upon the prices obtaining in the European cities whence the paper is exported, with the import duty of 8 per cent ad valorem and other incidental expenses added thereto. The terms of sale are usually cash. The values of paper consumed for the whole country for each class or kind, for 1897, were as follows·

Writing paper	$223,040
Cigarette paper	115,105
Common paper and cardboard	204,145
Printed matter	147,905
Miscellaneous	7,580
Total	727,775

As little attention is paid to the collection of statistics, it is impossible to state the total number of paper firms, companies, or brokers in Egypt. This business is conducted by small and unimportant dealers.

PRODUCTION.

The Nile, the one source of water power, is highly developed by the distribution of its yearly tide as a fertilizing agency. This distribution would interfere with the development of any form of water power for manufacturing purposes, especially as an elaborate series of dams is in process of construction with the object of trebling the present area of cultivation. There are no paper mills in Egypt, and there are no facilities for making paper machinery.

IMPORTS.

Nearly all kinds of paper are imported into Egypt. The market prices of each kind vary so greatly that no estimate can be given of them. The countries from which paper is imported are England, Austria, Germany, Italy, Belgium, France, Greece, Sweden, Switzerland, the United States, Holland, Roumania, and Turkey. It is impossible to state the quantity of paper imported from these countries, but the values of the principal classes are as follows, for the year 1897:

Country.	Writing, news, and book paper.	Cigarette paper.	Cardboard and wrapping paper.	Wall paper.	Various kinds of paper and articles made of paper.
England	$16,675	$625	$11,230	$810	$38,360
Germany	14,360	585	17,750	1,095	9,905
Austria	117,295	62,235	113,325	1,200	13,950
United States	425				205
Belgium	13,645		7,440	1,340	7,410
France	31,415	40,795	11,200	2,475	49,975
Holland					55
Italy	28,315	1,180	72,330	645	20,205
Roumania					80
Switzerland	130		435		895
Turkey	250	9,665	410		5,135
Greece	55				1,525
Sweden	445				
Other countries					165
Total	223,010	115,085	224,120	7,565	147,865

The valuation of all importations into Egypt was for 1896 $49,143,020 and for 1897 $53,018,150. Great Britain controls the import business of Egypt. Turkey, although she sends less than half as much as Great Britain, comes second, with France a close third. All the other countries combined export to Egypt about half the amount sent by Great Britain.

BANKING AND MAIL FACILITIES.

The banking facilities are excellent. Three-month bills are usually accepted. The mail facilities with the countries from which paper is imported are good. The time occupied between Alexandria or Port Said and the Mediterranean ports is from two to five days, and there are five weekly mails from Europe by British, Austrian, Italian, and French steamers. The telegraph facilities are perfect.

EXPORTS.

Cigarette paper is the only kind of paper exported from Egypt. The countries to which it is shipped are Great Britain, Turkey, Greece, Bulgaria, and the United States. It is not possible to state the quantities, but the values in 1897 were, according to a government publication, as follows:

Turkey	$2,815
Great Britain	189
United States	400
Bulgaria	285
Greece	95

The usual method of payment is by three-month bills. The duty on all exports is 1 per cent ad valorem. Mails for Great Britain are landed at Brindisi and are sent from there by rail to their destination.

THOMAS SKELTON HARRISON,
CAIRO, *February 23, 1899.* *Agent and Consul-General.*

MADAGASCAR.

The population of the island of Madagascar is about 4,000,000; of Tamatave, about 8,500. The capital, Tananarivo, has some 100,000 inhabitants. The proportion of illiteracy is about 95 per cent. The Hovas, former rulers of the island, are by far the most intelligent of the native contingent. They are of an imitative turn of mind and readily learn almost anything.

CONSUMPTION.

Paper is used here principally for wrapping parcels, though they frequently substitute a large, broad green leaf, called "ravinalla," for wrapping in the market, and another, called "hofa," for inclosing parcels for transportation on the backs of men to the interior. There are no industries requiring the use of paper. There are no paper firms, companies, or brokers. Three papers are published on the island. There are no printers, except those in the government service and a few taught by the missionaries for printing their Sunday-school publications. There are no publishers on the island. The consumption of paper is confined to the small shopkeepers—Chinese, Indians, and Creoles. A few of the larger English houses import paper for their own use. There are no articles manufactured from paper here. In my opinion, the consumption of paper is not likely to increase for years. The French nation dominates trade of all kinds by the prohibitory tariff laws.

PRODUCTION.

There is considerable undeveloped water power in the interior of the island. Railways and navigable water ways exist on paper at present, save about 8 miles of railway from Tamatave to Ivondro, not yet completed. Fuel here consists of wood, charcoal, and agglomerated bricks (from France), costing from $11.58 upwards per ton. Transportation is effected on the backs and shoulders of men.

There is a tree, the name of which I can not at present learn, from the fiber of which the finest quality of bank-note paper can be made. A large quantity of the fiber of aloes also exists in the region of Fort Dauphin. Rafia fiber grows here in abundance; but I learn from an English manufacturer, who has experimented with it, that it is too expensive for this use. The quantities of these trees and fibers are large, as the island is as yet quite undeveloped. I can not state the cost of these materials, as they must be transported on the backs of men, which is expensive. There are no facilities for making machinery or paper, nor are there any mills on the island.

BANKS, TARIFFS, AND MAILS.

The banking facilities are confined to branches of the Comptoir National d'Escompte de Paris at Tamatave, Majunga, and Tananarivo. The tariff on paper is 13 francs ($2.51) per 100 kilograms (220.46 pounds); minimum tariff, 10 francs ($1.96) per 100 kilograms; writing paper, 15 francs ($2.89) per 100 kilograms. French papers are free of duty.

The mail facilities between France and Madagascar consist of two steamers per month, arriving on the 5th and 15th and departing on the 3d and 18th of each month. The English mail (intermediate steamers Castle Line) touches at Tamatave once a month on the return trip via Mauritius. The inland mail is carried by men. The telegraphic facilities of the island are unreliable, by reason of frequent interruptions.

IMPORTS.

The quantity of paper imported annually is small. Imports of all sorts of paper for the year 1897, according to the official figures, were valued at $26,043, of which $12,976 came from England and colonies, $12,947 from France and her colonies, and $120 from America.

France controls the import business by a tariff policy that is all but prohibitive in its nature. Other countries are doing nothing at present to build up their export business here. Hitherto, England and America have had control of the trade here, but the present policy makes competition well-nigh impossible.

Nothing is being done to develop the paper and pulp trade at present, even by France. I see no opening for American paper or articles manufactured therefrom. Nothing but an amelioration of the French tariff rates can build up our exports to this island.

M. W. GIBBS,
Consul.

TAMATAVE, *January 18, 1899.*

MADEIRA.

The total population of the island, according to the latest census, is 134,040. The percentage of illiterates is 75.

The people may have mechanical traits, but no paper is produced here.

Paper is used for wrapping, printing, etc. There are no industries peculiar to the country requiring it. All kinds are used, and there are no special requirements as to quality, weight, size, etc. The terms of sale are mostly cash.

There are no paper firms; paper is sold in ordinary shops.

Five daily papers, 1 semiweekly, and 2 weeklies are published. There are about 40 printers and 8 publishers. There is no steam press in the city. Two bookbinderies are established here.

The consumption of paper, I think, is not likely to increase. No paper or paper machinery is manufactured here. All transportation is by water.

I give below a table showing the quantity of paper imported and dispatched in the custom-house at Funchal for the year 1897, with duties thereon:

Classification and country of origin.	Weight.	Value.	Duty.
Writing paper, white and colored:	*Pounds.*		
Germany	811	$170.64	$53.63
France	246	48.60	17.66
England	3,211	557.27	220.27
Photographic paper:			
Germany	1	1.08	.02
France	85	75.60	.97
England	8,126	615.17	112.91
Printing paper:			
Germany	28,603	945.00	362.18
England	3,068	192.24	51.05
Wall paper:			
Germany	381	51.84	26.13
France	176	50.76	12.11
England	436	182.52	29.93
Paper not specified:			
Germany	58,223	4,254.66	1,711.36
France	41	16.20	1.22
England	13,330	1,396.54	391.81
Total	116,738	8,558.12	2,993.25

T. C. JONES,
Consul.

FUNCHAL, *January 17, 1899.*

SOUTH AFRICA.

POPULATION.

The population of the colonies of the Cape of Good Hope and Natal, the South African Republic, and the Orange Free State is estimated altogether at 583,468 whites and 627,661 blacks, but this does not include the large white and black population in other parts of South Africa under English, German, and French jurisdiction. The percentage of illiterates is unknown, but nearly all the blacks are uneducated.

CONSUMPTION AND PRODUCTION.

The uses of paper are the same as in all other countries. There are no industries peculiar to the country requiring paper. It is impossible to give answers to all the questions propounded in their sequence, as there is no production of paper in this country. There are no paper mills and no rivers to supply water, except during the rainy season. Neither is it possible to give the number of paper firms, their addresses and importance; the number and kinds of the publications, or the number of printers and publishers. Even the directory of South Africa, costing $8, would not give in all cases the occupations.

The consumption, I think, is bound to increase.

IMPORTS.

The imports of paper into South Africa in 1897 (with the exception of Lourenço Marquez, in Portuguese territory) were:

News, book, and printing paper, £74,482 ($362,467.65), of which the United Kingdom furnished £67,279 ($327,435.25) and the United States £2,851 ($13,874.39).

Stationery, which includes writing paper and all other articles included under this head, as understood in our own country, £310,078 ($1,508,994.58), of which the United Kingdom furnished £267,500 ($1,301,798.48); Germany, £16,900 ($82,245.85); United States, £11,053 ($53,799.42). I give only the principal countries, the balance being divided in small amounts among other countries. I regret that the governments of South Africa do not classify more in detail. Classes of papers imported are:

Loans and banks—large post, 11 to 15 pounds; medium, 13 to 18 pounds; cap, 7, 12, and 15 pounds.

Handmade for legal purposes and account books, cream and blue, wove and laid—cap, 15 to 18 pounds; medium, demy, and royal, same substance.

Handmade for scrip—large post, cream wove, 13 pounds; medium, cream wove, 15 pounds.

Commercial and good printing—cap, 11, 15, and 18 pounds; also, same in large post, medium, double demy, royal, and double crown.

Printing—double-demy printing paper, white and colored, in all weights and qualities. A fair amount of double crown is also used.

Account-book paper—cream and blue laid double cap, 30 to 36 pounds; cream and blue laid medium, 21, 27, and 32 pounds; also double crown, double demy, royal, and imperial.

Brown and wrappings—double imperial, 80 to 100 pounds; casing and extra casing in same; principal paper used, glazed, brown, or rope, 80 to 100 pounds for double imperial.

PRICES.

Market price: Loans and bank, 4d. to 12d. (8.1 cents to 24.3 cents) per pound, according to quality; handmade, 10d. to 2s. (20 cents to 48.6 cents), according to quality and supply; cream laid, 4d. to 7½d. (8.1 cents to 15.2 cents); printing, 1⅜d. to 4d. (2.8 cents to 8.1 cents); account book, 4d. to 12d. (8.1 cents to 24.3 cents). For browns and wrappings, the market fluctuates considerably. Glazed brown rope costs from £7 10s. to £9 10s. ($36.50 to $46.23) per ton of 2,240 pounds. Other qualities, from £7 to £11 ($34.06 to $53.53). German wrapping paper is the cheapest.

DUTIES, BANKS, MAILS, AND FREIGHTS.

Printing paper enters free of duty; all other paper is taxed 7½ per cent.

The banking facilities are good, with connections everywhere. Mails come weekly by steamers from England. Transportation is effected by regular and tramp steamers. Rates from the United States have been less than from Great Britain, and yet British bottoms bring all the imports from the United States.

AMERICAN TRADE.

In former reports, I have given the methods by which American-made goods have been sold in this country, and, while the means used have been successful in some lines, in others but little work has been done. Sometimes, too many lines are represented by one person. I regret my inability to reply to other questions, but it must be remembered that this is a new country, comparatively speaking, and has not yet published books of information and full statistics. That it is a country which is fast becoming a good customer of

America can not be denied. Notwithstanding the war with Spain, which retarded movement of freights, and the losses in this country of cattle, sheep, crops, etc., I feel assured the imports of 1898 will show an increase over 1897. Scrap paper and rags are not in demand, and do not find a market here as in other countries. When attention is given to this market by the paper manufacturers of the United States, orders will be placed. While freight is less from the United States than from Great Britain, if return cargoes could be assured it would be still lower.

J. G. STOWE,
Consul-General.

CAPE TOWN, *January 6, 1899.*

SOUTH AFRICAN REPUBLIC.

The population of this Republic, according to the census of 1897, was 878,626, of which 289,500 were white. Pretoria district had 78,618, of which 40,000 were white. The increase is estimated to be 10 per cent throughout. The illiterates number about 62 per cent.

In 1892, the Government granted to a certain W. W. Maré a concession for the manufacture of paper for a period of twelve years. Said Maré contracted to make this paper from the raw materials produced in the Republic, and was to sell his product at wholesale only. He was to pay to the Government the sum of £100 ($486) per annum, or, in lieu thereof, 10 per cent of the net profits, at the option of the Government. He further deposited a forfeit of £250 ($1,215) as a guaranty that he would have the concern in operation within eighteen months from the signing of the contract. He was unable, evidently, to procure the necessary capital to begin his operations within the specified time, and the matter dropped out of sight. Not long since, the Government was persuaded to renew the concession, and it is now believed the factory will be built. When it is producing, the concessionary will have a practical monopoly of the paper trade, as the Government will levy a prohibitive tariff on all foreign competing products; therefore, the outlook for American-manufactured paper in this district is decidedly gloomy.

There are no concerns here dealing exclusively in paper. There are some 50 printers and publishers, including 5 daily, 15 weekly, and 5 monthly newspapers and journals published in the Republic. There is also one box manufacturer. I am informed that the United Kingdom supplies practically all the paper at the present time. As to the prices, etc., of the different classes of paper imported, I have not been able to obtain exact data.

CHAS. E. MACRUM,
Consul.

PRETORIA, *January 17, 1899.*

TUNIS.

In answer to Department's circular relative to the fabrication of and commerce in paper in Tunis, I should be glad to answer the questions transmitted in a way that might lead to the establishment of trade, but I regret to say that at the present moment business is in an unsettled condition.

POPULATION.

A regular census of the population of the regency has never been made. Private estimates vary widely, but the general impression is that the present population does not surpass 1,500,000 inhabitants, of whom 1,400,000 are Arabs, 60,000 are Jews, and 40,000 are Christians. It is thought that the number of lettered men (women do not read) does not reach 10 per cent of the male population of the country.

There are no manufacturers of paper of any sort in Tunis, and the people show no mechanical disposition.

CONSUMPTION.

Paper is used in Tunis for packing and wrapping goods, for daily papers and advertisements, for printing and private offices, for correspondence, etc., but I do not know of any industry especially requiring it. French importations of paper are received free; the foreign ones have to pay 8 per cent ad valorem. The following are most used, the prices being given per 100 kilograms (220.46 pounds):

White printing paper, divers sizes (f. o. b. Tunis), 30 francs ($5.79); letter paper, from 90 to 110 francs ($17.37 to $21.23), according to quality (f. o. b. Tunis); advertising paper, glazed on one side only, 50 francs ($9.65); colored paper, glazed on both sides, 50 to 60 francs ($9.65 to $11.58); account books, 90 to 100 francs ($17.37 to $19.30), according to quality; parchment, 75 francs ($14.48), in several colors; ledger paper, 38 to 40 francs ($7.33 to $7.72), according to quality; blue goudron (tarred), 50 francs ($9.65); ordinary goudron (tarred), 40 to 45 francs ($7.72 to $8.69).

I have procured these prices from a printer on whose honesty I can rely; but I believe that the prices are for retail, as he can not buy large quantities at a time.

The paper trade is not developed enough here to constitute a special commerce. The more important quantities used by the daily papers are imported direct from France by the managers.

There are about 10 printers in Tunis, about 2 at Susa, 2 at Sfax, and 1 at Bizerta. Publishers have not succeeded as yet, on account of lack of demand, the European population being much divided in nationalities. There are 2 daily papers in Tunis—one French (La Depéche Tunisienne) and one Italian (L'Unione).

WATER POWER.

No water power has been developed. Tunis has always depended for its fresh-water supply upon the numerous cisterns of its private houses. These cisterns collect rain from the roofs and secure in this way a quantity more than sufficient for the wants of the population. Fresh-water wells are also dug here and there, and two immense reservoirs near the town are filled by a small torrent during the winter.

In 1869, Bey Ahmed Sadok Pacha, encouraged by the French resident, Mr. Leon Roches, decided upon bringing to Tunis the water of the celebrated spring of Mount Zawan, about 50 miles distant, which had been brought to Carthage by the Roman Emperor Hadrian. This work was executed by a French company with entire success; it added about 7,000 tuns daily to the town's supply. The water is distributed between Tunis, Mohamedia, Bardo, Marsa, Ariana, Goletta, and Carthage. The quantity of water available, however, is still insufficient for industrial purposes. About 20 miles from Tunis is a large river, the Medjerdah, which runs to the sea near the village of Porto-Farina, a short distance from Bizerta. The Bona Railway line touches this river in two different places, at one of which a water mill is located. The stream is 150 to 200 feet wide at this place.

FUEL.

The different kinds of fuel used in Tunis are:

(1) Charcoal, made by the natives for domestic uses; can not be used for engines, as it costs 80 francs ($15.44) per ton.

(2) English or French coal, costing 30 to 32 francs ($5.79 to $6.18) per ton f. o. b. Tunis.

(3) Brushwood is used by charcoal makers, lime burners, and kiln burners. It is found in large quantities on the hills and plains.

RAW MATERIALS.

Raw materials which might be used are the following:

(1) Rags of cotton, linen, wool, silk, etc. The Arab women dress principally in cotton, linen, and silk; the men, in cotton, linen, and wool. The total absence of any paper manufactory in the whole of the regency of Tunis and in Tripoli would help in the collection of very large quantities of these rags at a moderate price.

(2) Esparto grass. This is found in the vicinity of Tunis; but principally near Susa, Sfax, and even farther south. It is bought

by English houses. Esparto is excellent for paper, as well as for textiles. It is sent to Europe without preparation, pressed in bales.

(3) There are many trees belonging to the European flora in the fine forests of the Algerine frontier; green and white oak, cork oak, olive trees, cypresses, and the like, as well as mosses, seaweeds, etc.

Being principally an agricultural country, Tunis produces a thick and heavy wheat straw, from which common but strong paper is made in Italy. This is much appreciated here for wrapping goods.

I must not forget to mention the aloe tree, which is extremely common here and has a strong fiber.

IMPORTS AND BANKING AND TELEGRAPH FACILITIES.

The paper formerly imported came from France, Italy, and Austria; it now comes from France, since the modification of the tariff.

Banking and financial connections exist in Tunis at the present time only with France and England. Tunisian money, being the same as the French in type and value, is exchanged at par. The exchange between England and Tunis follows exactly the variations between the English and the French exchange. Any other country desirous of undertaking commercial operations with Tunis must arrange credits either in London or Paris.

Telegraph facilities are excellent; any part of the world can be reached by telegraph or by telephone.

AMERICAN TRADE.

I do not see at this time any opening for America in paper or pulp, on account of the new French tariffs, which oppose any attempt to import American goods here. But I am convinced a large business might be done by establishing local paper manufactories under Tunisian names. The market would cover the whole of Tunis, Algeria, Tripoli, Morocco, Malta, and even Egypt. Labor is very cheap, and Tunisian products pay no duty in Algeria or France. No taxes have ever been imposed upon such an industry.

ALFRED CHAPELIÉ,
Vice-Consul.

TUNIS, *December 29, 1898.*

AUSTRALASIA.

NEW SOUTH WALES.

POPULATION.

Population considered, the consumption of paper in New South Wales must equal that of any country on the globe.

Approximately, there is a population of 1,250,000 in this colony, and, as the people are purely white and almost purely "British," they have a fairly liberal public-school system; further, as the country is new, wealthy, and progressive, the people are almost universally educated.

PRODUCTION AND CONSUMPTION.

This is indeed a country of books and newspapers, and the average citizen is a voracious reader. There are no special requirements as to weight, quality, etc., as in this matter this colony might be safely compared to one of our States of like population.

While the people are industrious and ingenious and readily adapt themselves to mechanical trades and manufactures, the meagerness of the population will not justify the building and equipment of factories suitable for turning out the many classes and varieties of paper used. There are but two paper factories in this colony, with a total output of about 700 tons per annum. The product is only wrapping paper of rather common grade, and the material used is waste paper, with a limited quantity of rags and jute. The price, wholesale, is from £11 to £13, or, approximately, $55 to $65 per ton. I doubt if these paper mills are prosperous.

Paper can not be manufactured cheaply in this country; for, while fuel is reasonable in price, there is no water power and practically no material, save waste paper and a very limited supply of rags. Railway transportation and labor are high, and skilled labor is scarce at any price.

There are 12 daily newspapers published in New South Wales, at least 2 of which claim over 50,000 daily circulation; then there are 229 weeklies and 45 monthly publications.

Considering the population and the number of publications, the size of the newspapers in New South Wales surprises every observant American at all acquainted with such affairs. The weekly journal, with colored cover and from forty to sixty 12-by-18-inch pages, is not unusual. The enterprise of business men in advertising is so strong that enormous space is required to fill the demands. I believe the Australians are the best advertisers on the globe.

There are 3 or 4 publishing houses that turn out in the aggregate some 500,000 volumes per year. This is approximate only.

IMPORTS.

I am informed that paper is imported from all sources into New South Wales to a total of some 30,000 reams per annum.

In a "free-trade" country like this, where no end is to be attained by minute classifications and detailed bookkeeping, it is no easy task to secure exact statistical information regarding any class or variety of imports, either as to quantities or prices; but the following list, I believe, is sufficiently correct to answer all practical purposes.

While I shall give the imports from all countries, it must be remembered that substantially all imports from the Australasian colonies were imported by those colonies from other countries.

Imports of paper for 1897 (latest published statistics) from all countries.

Articles and whence imported.	Quantity.	Value.	
Paper bags:			
Plain—			
Australasia—	*Cwts.**		
Victoria	195	£358	$1,742
Queensland	42	45	219
South Australia	74	43	209
United Kingdom	9,820	7,793	37,925
Germany	271	217	1,056
United States	4,287	4,850	23,603
Total	14,689	13,306	64,754
Printed—			
Australasia—			
Victoria	34	86	419
South Australia	499	735	3,577
United Kingdom	100	510	2,482
Total	633	1,331	6,478
Paper, brown and wrapping:			
Australasia—			
Victoria	357	669	3,256
Queensland	11	19	92
South Australia	575	682	3,318
New Zealand	72	56	273
United Kingdom	27,197	18,274	88,930
India	113	93	453
Belgium	419	445	2,166
China	5	4	19
France	38	211	1,027
Germany	15,776	11,979	58,296
Italy	39	57	277
Sweden	55	47	229
United States	1,494	1,369	6,662
Total	46,151	33,905	164,998
Grand total	61,473	48,542	236,220

* 1 cwt. = 112 pounds.

These are the cheaper classes of paper, which are imported by weight, and it may be observed that in the cheapest of cheap paper Germany is the chief competitor of the United Kingdom, while the United States is hardly in evidence. However, a casual comparison of the amounts with values indicates that the American article imported was rated higher than was the English or German product.

The better and more expensive goods are imported in "packages," and in these classes we are more particularly interested.

The following is a list of the imports of the better grades from all countries for the same year as above, and again I must remark that the classifications are rather loose (Statistical Register, 1897):

Articles and whence imported.	Packages.	Value.	
Circulars and advertising matter:			
Australasia--			
Victoria	422	£2,461	$11,976.00
Queensland	15	78	380.00
South Australia	101	441	2,146.00
Tasmania	3	17	83.00
New Zealand	47	275	1,338.00
United Kingdom	2,687	13,183	64,157.00
Dominion of Canada	58	388	1,888.00
Hongkong	2	3	14.00
India	1	30	146.00
Belgium	1	30	146.00
France	22	103	501.00
Germany	51	671	3,265.00
United States	277	2,411	11,733.00
Total	3,687	20,091	97,773.00
Printing and news paper:			
Australasia—			
Victoria	623	2,063	10,040.00
Queensland	258	295	1,436.00
South Australia	221	1,445	7,032.00
Tasmania	8	50	243.00
New Zealand	9	61	297.00
Dominion of Canada	161	1,137	5,533.00
United Kingdom	16,024	79,202	385,436.00
Belgium	258	781	3,801.00
France	5	89	433.00
Germany	2,668	9,550	46,475.00
Italy	6	90	438.00
Sweden	180	851	4,141.00
Norway	6	23	112.00
United States	15,762	59,679	290,428.00
Total	36,189	155,316	755,845.00
Paper waste:			
Australasia (South Australia)	29	6	29.00
Germany	13	9	44.00
Total	42	15	73.00
Paper (writing, note, envelopes, and fancy paper):			
Australasia—			
Victoria	204	1,202	5,850.00
Queensland	15	104	506.00
South Australia	67	524	2,550.00
New Zealand	7	56	273.00

Articles and whence imported.	Packages.	Value.	
Paper (writing, note, envelopes, and fancy paper)—C't'd.			
United Kingdom	4,562	£37,785	$183,880.00
France	2	13	63.00
Germany	52	259	1,260.00
United States	70	438	2,132.00
Total	4,979	40,381	196,514.00
Books and periodicals:			
Australasia—			
Victoria	1,788	21,736	105,778.00
Queensland	125	1,425	6,935.00
South Australia	355	2,262	11,008.00
Tasmania	13	75	365.00
New Zealand	155	2,596	12,633.00
United Kingdom	8,522	110,998	540,172.00
Canadian Dominion	3	7	34.00
Hongkong	9	34	165.00
India	1	5	24.00
Ceylon	1	13	63.00
Norfolk Island	1	1	5.00
Belgium	1	1	5.00
China	18	31	151.00
France	21	262	1,275.00
Germany	60	1,032	5,022.00
Italy	5	61	297.00
Japan	1	2	9.00
South Sea Islands	1	12	58.00
United States	395	5,200	25,306.00
Total	11,498	145,753	709,305.00
Paper hangings:			
Australasia—			
Victoria	231	961	4,677.00
South Australia	121	694	3,377.00
Tasmania	1	5	24.00
New Zealand	1	1	5.00
United Kingdom	2,724	14,484	70,486.00
Germany	33	150	730.00
Japan	1	8	40.00
United States	87	112	545.00
Total	3,199	16,415	79,883.00
Grand total	59,594	377,971	1,839,393.00

As with many other articles, the three chief competitors in paper in this market are the United Kingdom, Germany, and the United States. Indeed, these three countries have about all the trade in this line worth having, and relatively they stand as follows:

First, as with every other staple article, comes the United Kingdom, with 28,519 packages, valued at £255,562 ($1,244,982); then comes the United States, with 16,591 packages, valued at £67,840 ($330,102); and then Germany, with 2,864 packages, valued at £11,662 ($56,677).

It will be noticed in the above tables that "books and periodicals" are classed as paper, and only by a little analysis of this can the character and value of our paper trade in this country be understood. Under the latter head, it will be seen that 8,552 packages are imported from the United Kingdom, valued at £110,898 ($540,172), while from the United States there were but 395 packages imported, valued at £5,200 ($25,306). This, however, is a little misleading, as a portion of our "book-and-periodical" trade is via London, and these are credited as imports from the United Kingdom.

It is in "news paper and printing" that we have our best trade, but the figures showing that 16,024 packages, valued at £79,202 ($385,436), come from the United Kingdom, with 15,762, valued at but £59,679 ($290,428), from the United States, indicate that proportionately the United Kingdom sends to this market more of the higher grades, or book, and the United States more of the lower, or news, paper.

We have, however, steadily gained for several years. In the years 1894–1898, the three leading competitors stood as follows in these lines. For 1898 the returns are not published, but were furnished at my request by Mr. Lockyer, chief of customs.

Country.	Packages.	Value.	
1894.			
United Kingdom	14,822	£83,226	$404,478
United States	5,021	18,084	87,889
Germany	1,023	2,879	13,992
1895.			
United Kingdom	15,075	78,815	383,040
United States	7,146	26,472	128,654
Germany	1,484	4,472	21,734
1896.			
United Kingdom	13,953	66,504	323,210
United States	8,366	33,778	164,162
Germany	2,207	7,507	36,484
1897.			
United Kingdom	16,024	79,202	384,922
United States	15,762	59,679	290,040
Germany	2,668	9,550	46,414
1898.			
United Kingdom	12,315	65,019	315,993
United States	20,259	77,660	377,914
Germany	1,196	5,479	26,628

It will be noticed by a casual study of the table that approximately three-fifths of the paper imported—aside from that in published form—comes under the head of printing and news paper, and our having so rapidly outstripped all competitors in so short a time is very gratifying. To me, it is especially gratifying, as when I discovered our relatively small trade over five years ago, relying on the merits of our products, I strongly urged the policy which has resulted in these splendid achievements.

HOW TO EXTEND AMERICAN TRADE.

The success of our paper manufacturers in the Australasian markets is another demonstration of the wisdom of resorting to special efforts through special agencies when the introduction of special lines is desired. As Scipio is said to have closed every speech with a declaration that "Carthage must be destroyed," so, at the risk of wearying by reiteration, I venture to use this opportunity to again remind my commercial countrymen that in the introduction of any special article or line of goods into Australia, a special investigation by a well-equipped person is necessary. Further, such lines should be placed in the hands of agents on the ground, or of reliable and well-established houses, familiar with Australian tastes, the demands of the market, and the responsibility of the trade.

Our paper trade in Australia has been conducted on high business principles, and by the use of like methods several other staples of American production could be as successfully introduced into this country.

It seems to me that we should increase our paper trade under the head of "books and periodicals," and I am confident, with proper effort, that we would have from one-third to one-half of the $200,000 paid annually by New South Wales for fine and fancy stationery. The quality of our goods in these lines is established, but the price so far has been against us.

Unless there should be some radical fiscal change, there is little likelihood of an increased production of paper in this colony, and, as the consumption will probably grow with the population and prosperity of the people, the field for our manufacturers, of course, is gradually expanding.

I know of no manufactories of any kind in this country using wood pulp as a raw material, or making articles from any class of paper.

TRANSPORTATION FACILITIES.

In the matter of transportation, all of our competitors have the advantage both in rates and frequency of communication. At least one steamer per week arrives in the port of Sydney from England, and one as often from Germany; while from the United States, steamers leave New York and San Francisco for Sydney but once a month—or, to be more accurate, one per month from New York and one in four weeks from the Pacific port. Freights from Europe are on an average very materially lower than from American ports.

GEO. W. BELL,
SYDNEY, *March 10, 1899.* *Consul.*

NEWCASTLE.

POPULATION.

The present population of Newcastle, including suburbs, is about 70,000. It is impossible to estimate the percentage of illiterates, but it can not be large. The people belong to the Anglo-Saxon race, and are consequently fitted to produce paper or any other commodity.

CONSUMPTION.

The uses of paper are for newspapers, job printing, wrapping paper, and covering walls; the only peculiar paper used is for packing butter. Paper costs from 3 to 4 cents per pound, the terms being cash or thirty days' time.

As a fair sample of the amount consumed, the Newcastle Morning Herald uses from 15 to 20 tons annually, while one of the largest business houses uses about 12 tons for the same period. The paper brokers all reside in Sydney. They are Spicer & Sons, Edward Dunlop & Co., and Cairn & Son.

There is but one paper mill in this district, a small concern located at Liverpool, New South Wales.

The consumption of paper is increasing every year.

America furnishes most of the paper; next come Germany and England.

PRODUCTION.

There is little or no undeveloped water power that is liable to be utilized in the manufacture of paper.

Coal is used as fuel and costs about $2 per ton; it is of good quality. Rivers and railways for transportation are near at hand.

No natural products are utilized in the manufacture of paper, rags only being employed.

No paper-making machinery is made. The cost of skilled labor averages 25 cents per hour.

IMPORTS AND AMERICAN TRADE.

There are imported all the various kinds of paper, including news, jobbing, tea, wrapping, etc. There is no duty on paper.

Regarding the best methods of increasing the introduction of paper, I would suggest that live men be placed in Sydney, and, using that as a business center, that they thoroughly "work" the district. Such men, knowing all the details of the work, will be able to prove that American paper is the cheapest and best used. As large quantities are imported here from the United States, a tactful person could completely control the trade of this port. It is only by personal contact that business may be increased to any great extent.

F. W. Goding,
Consul.

Newcastle, *June 19, 1899.*

NEW ZEALAND.

POPULATION.

The estimated population of the colony of New Zealand on December 1, 1897, was 768,910. The percentage of illiterates was 19.4 (including children). The people have mechanical traits.

CONSUMPTION.

Paper is used for bags, hanging, printing, wrapping, and writing. Various qualities, weights, and sizes are employed. Paper bags cost $6.45 per cwt.; butter paper, 10½ cents per pound; hangings, 6 cents to $1.58 per piece; printing, 4½ to 8 cents per pound; wrapping, $4.87 per cwt.; writing, 7 to 48 cents per pound.

Credits run for four, five, and six months.

There are about 100 publications and 20 printers in the colony.

PRODUCTION.

The supply of undeveloped water power is almost unlimited in various localities within reasonable distance of railways and navigable water ways.

Coal costs $2.79 per ton f. o. b. Westport; wood costs about $5.10 per cord. Facilities for transportation are good.

Nine mills produced paper bags and cardboard boxes to the value of $37,462.32 in 1897, and paid $15,333 in wages. Water power and steam are employed.

IMPORTS.

In 1897, Great Britain sent 797,106 pieces of hangings and 93,597 cwts. of various papers to this colony.

The tariff rates are: Paper bags—coarse, $1.82 per cwt. (112 pounds); other, 25 per cent ad valorem; letter paper, free; hangings, 15 per cent ad valorem; printing, free; wrapping, $1.21 per cwt.; writing, 20 per cent ad valorem.

Imports for the last five years for which statistics are available were:

1893	$541,836
1894	570,632
1895	537,938
1896	571,848
1897	622,815

MAIL, CABLE, AND BANKING FACILITIES.

Mails are brought fortnightly, occupying thirty days in transit. The cable service is good. Banking facilities are satisfactory.

FRANK DILLINGHAM,
Consul.

AUCKLAND, *February 11, 1899.*

VICTORIA.

PRODUCTION.

The trade in paper in the colony of Victoria is practically in the hands of a few firms, and much difficulty has been experienced in eliciting information on the subject.

There are three paper mills in the colony in active operation, namely:

The Barwon Company, Geelong.
The Broadford Company, Broadford.
The Australian Paper Mills Company, Melbourne.

The output of these mills is moderate; particulars as to the quantities, values, etc., of the various lines produced could not be obtained, extreme reticence being shown when information was requested. The methods of manufacture are not up to date, and no exports are made. There are no pulp mills in the colony.

The total number of printers in Victoria may be estimated at between 500 and 600, and the publishers at from 350 to 400, most of whom publish newspapers. It is impossible to give the number of users of other classes of paper.

The bulk of the paper consumed in the colony is imported from the United States; Scotland, England, Germany, Belgium, Austria, and Norway follow in the order given.

IMPORTS.

The quantities and values of paper imported during 1897, the latest year for which official statistics are available, are given in the Statistical Register of Victoria as follows:

Description.	Quantity.	Value.
Advertising matter.....pounds...	169,103	$35,194.52
Bags.....cwts...	542	4,438.44
Cardboard and pasteboard.....do.....	10,145	42,581.87
Cut, writing.....pounds...	2,700	291.99
Cut, other.....do.....	65,659	24,736.41
Other.....cwts...	20,174	138,461.65
Other.....pounds...	333,776	208,964.88
Printing, uncut.....cwts...	202,772	759,477.92
Wrapping.....do.....	5,011	17,708.99
Writing, uncut.....do.....	29,613	274,436.53

The principal firms importing paper into the colony—all of Melbourne and of about equal importance—are the following:

Alexander Cowan & Co., Limited, Little Flinders street.
William Detmold, Limited, Little Flinders street.
Busbridge & Co., 430 Bourke street.
Sands & McDougall, Limited, 365 Collins street.
Gordon & Gotch, 124 Queen street.
Jas. Spicer & Sons, 315 Flinders lane.
Phaff, Pinschof & Co., Little Flinders street.

DUTIES.

The duty on paper in the colony of Victoria is as follows:

Cut, 4 cents per pound.

Advertising matter, printed or lithographed, or any printed plates, lithographs, pictures, cards, calendars, almanacs, or matter of a similar description used or designed for use for advertising purposes, 8 cents per pound.

Other, $1.46 per cwt. (112 pounds).

Paper bags, $2.43 per cwt.

Paper boxes, including paper or cardboard (with or without printing), cut into shapes for wrapping or boxing, 25 per cent ad valorem.

Cardboard and pasteboard, 97 cents per cwt.

Paper, being printing and writing, in original wrappers and with uncut edges as it leaves the mill, paper hangings, and millboard (including gray millboard), free.

Specially prepared for making gun or blasting cartridges, free.

Vegetable parchment (used for packing and wrapping butter), free.

Paper, writing, fancy wrappers, 35 per cent ad valorem.

Paper, all printed, ruled, or engraved forms of, bound or unbound, 35 per cent ad valorem.

Paper or cardboard (with or without printing), cut into shapes for wrapping or boxing, 25 per cent ad valorem.

CONSUMPTION.

Paper is principally used for printing, writing, wrapping, cardboards, blotting, and tissue. The principal industries requiring paper are box making and paper-bag making. These are well established in the colony.

The papers at present used are chiefly cheap qualities for printing and wrapping, and medium for writing, blotting, and cardboards. Weights and prices are:

Papers.	Size.	Weight.	Price per pound.
	Inches.	*Pounds.*	*Cents.*
Demy	22½ by 17½	10 to 14	2½ to 6
Medium	23½ by 18½	18 to 30	2½ to 6
Royal	25 by 20	16 to 40	2½ to 6
Super royal	28 by 20	20 to 40	2½ to 6
Imperial	30 by 22	30 to 60	2½ to 6
Double foolscap	27 by 17	10 to 40	2½ to 6
Double copy	33 by 20	20 to 40	2½ to 6
Double crown	30 by 20	12 to 40	2½ to 6
Double demy	35 by 22½	20 to 60	2½ to 6
Double post	25 by 15½	10 to 25	2½ to 6
Do	31¼ by 19¾	30 to 50	2½ to 6
Double large post	33 by 21	35 to 50	2½ to 6
Double medium	37 by 23½	30 to 60	2½ to 6
Double royal	40 by 25	30 to 70	2½ to 6
Writing papers:			
Large post	20¾ by 16¼	12 to 40	3½ to 8
Foolscap	16½ by 13½	18 to 26	3½ to 8
Post	18¾ by 15½	10 to 33	3½ to 8
Medium	22½ by 17¾	14 to 46	3½ to 8
Royal	24 by 19¼	16 to 53	3½ to 8
Super royal	27 by 19¼	18 to 60	3½ to 8
Imperial	30 by 22	23 to 76	3½ to 8

Printers are generally given four months' credit on open account or 2½ per cent for cash in the calendar month following the month of purchase and delivery.

Importers buy generally f. o. b. port of shipment or c. i. f. Melbourne, against confirmed banker's credit.

AMERICAN TRADE.

The consumption of paper in the colony is increasing from year to year, and will continue to do so. The United States is rapidly gaining the trade, and undoubtedly there is a splendid future here for our paper and articles made thereof.

JOHN P. BRAY,
Consul-General.

MELBOURNE, *March 30, 1899.*

POLYNESIA.

SAMOA.

The native population is estimated at about 35,000, who do not use paper at all. The whites number about 400 to 450. As the paper-using population is so very small, there is practically no paper trade.

Paper is used for writing and wrapping. It is cheap and of light weight. Writing paper is needed to answer one mail a month. The smaller traders use old newspapers for wrapping. There are no industries consuming paper. Sales are made for cash or at one month.

One weekly four-page newspaper is published. Two white men and two native boys are employed as printers.

Almost all paper comes from Sydney, but the United States supplies most of it, with England and Germany following. The best wrapping paper costs the traders 7 or 8 cents. Some straw paper comes from San Francisco.

New York drafts and London, Sydney, and Auckland bank notes and drafts are at par in Apia. Import duty on all sorts of paper is 2 per cent ad valorem. There is a monthly mail from San Francisco; time of passage, two weeks. Two mails arrive monthly from Auckland and Sydney. The former is five days and the latter eight days distant. There is a cable to Auckland. There are no tramp steamers, and sailing vessels bring only coal, etc.

From San Francisco, the freight charge is $12 per marine ton to shippers. From Auckland and Sydney, it is 40s. ($9.72).

It is cheaper to send goods from the eastern part of the United States to Sydney by schooner and then here by steamer than to ship direct from San Francisco.

L. W. Osborn,
Consul-General.

Apia, *January 23, 1899.*

EUROPE.

UNITED KINGDOM.

NEWCASTLE-ON-TYNE.*

POPULATION.

The total population of Newcastle-on-Tyne, according to the last census, was 186,345, and the present estimate is 223,000; but the population including that of the neighboring towns and villages on Tyneside can not be far short of from 800,000 to 1,000,000.

The people have mechanical traits. The chief industries here are engineering and shipbuilding.

CONSUMPTION.

Paper is used for newspapers, bookwork, ordinary commercial letter press and letter-press printing, envelopes, wrapping papers, wall papers, etc.

There are 5 daily newspapers, 2 evening newspapers, and 5 weekly newspapers. In Sunderland, North and South Shields, and Jarrow there are 5 daily, 2 evening, and 5 weekly newspapers. There are also 47 printers in Newcastle. In the adjoining town of Gateshead there are 9 printers; in North Shields, 12; in South Shields, 12; in Sunderland, 32. The number of publishers in Newcastle is 11.

The total number of the other users of paper is as follows: Paper merchants, 4; box makers, 2; paper-bag makers, 5; paper-hanging manufacturers, 1.

There are no industries for making articles from paper or pulp in this neighborhood, excepting one pulp mill making news. Pulp boards are made from pulp at only one mill here. Boards, buckets, and "hollow ware," patent compositions for photographic films, etc., are made from pulp, but not in this district.

The consumption of paper is likely to increase.

Norway, Belgium, and Germany dominate the paper trade.

The classes or kinds of paper used include news, colored and white printings and writings, drawings, cards of all kinds, wrapping papers, strawboards, etc.

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*Accidentally omitted from proper place.

The sizes chiefly used are:

PRINTING PAPERS.

Description.	Size.	Description.	Size.
	Inches.		*Inches.*
Post	19½ by 15½	Super royal	27½ by 20½
Demy	22½ by 17½	Double crown	30 by 20
Sheet and half post	23½ by 19½	Imperial	30 by 22
Medium	24 by 19	Double post	31¼ by 19¾
Royal	25 by 20	Double demy	35 by 22½
Double foolscap	27 by 17	Double royal	40 by 25

WRITING AND DRAWING PAPERS.

Emperor	72 by 48	Medium	22 by 17½
Antiquarian	53 by 31	Large post	20¾ by 16¾
Double elephant	40 by 26¼	Copy or draft	20 by 16
Atlas	34 by 26	Demy	20 by 15½
Colombier	34½ by 23½	Post	19 by 15¼
Imperial	30 by 22	Foolscap	17 by 13½
Elephant	28 by 23	Brief	16½ by 13¼
Super royal	27 by 19	Pott	15 by 12½
Royal	24 by 19		

BROWN PAPERS.

Casing	46 by 36	Imperial cap	29 by 22
Double imperial	45 by 29	Haven cap	26 by 21
Elephant	34 by 24	Bag cap	24 by 19½
Double four pound	31 by 21	Kent cap	21 by 18

A quire of paper contains twenty-four perfect sheets; an outside quire, twenty, some of which may be torn.

Terms of sale are usually cash, or three months' approved bill at 2½ and 5 per cent.

PRODUCTION.

Within a radius of 20 miles, there are only 9 paper mills. No information is available as regards the output. They use steam power. The paper is machine made and the processes and methods of manufacture are modern.

There are 5 paper manufacturers who have offices in Newcastle, and 4 wholesale paper merchants. The manufacturers are:

J. Annandale & Sons, Limited, Shotley Bridge, county of Durham; make superfine papers—writing and printing—ordinary white from 5 to 25 cents per pound; have 3 machines and can have three distinct makes running all at once; use rags.

Hendon Paper Mills Company, Limited, Commercial road, Sunderland; printings; use esparto grass; from 4 to 6 cents per pound.

Ford Paper Mills, Hylton, Sunderland; printings and cheap writings; use esparto grass.

Northeastern Paper Mill Company, Marsden, South Shields, county of Durham; makes news from wood pulp, imported.

Fletcher, Falconar & Co., Scotswood, Newcastle; manilas and browns; from $1.70 to $4.38 per cwt. of 112 pounds; use old ropes and baggings.

Grace & Co., Scotswood, Newcastle; manilas and browns; use old ropes and baggings.

Tyne Paper Mill Company, Pipewellgate, Gateshead-on-Tyne; browns; use ropes and baggings.

E. Richardson & Sons, Limited, Teams and Felling Shore Paper Mills, Gateshead-on Tyne; browns; use ropes and baggings.

POWER AND FUEL.

Steam power is used solely in paper making here. There is no undeveloped water power of any importance.

Coal is the principal fuel employed; the supply is abundant, and the transportation facilities are excellent. Gas engines are also extensively used. Steam coal costs $2.43 per ton; gas, 47 cents per 1,000 cubic feet, less 10 per cent.

RAW MATERIAL.

There is no timber or grass available for paper making here. Peat, which could be mixed advantageously with other materials in the manufacture of the coarser kinds of paper, is plentiful in this district, but is not made use of. Rags and other waste materials are collected in the usual way. The following are classed as "paper-making material:" Old bagging, flax waste, hemp waste, hide cuttings, jute waste, linen waste, old netting, oilcloth cuttings, old sails and old tarpaulins, rags (not oily), old rope, shakings from cotton mills, strawboard cuttings, old sugar mats, tow waste, waste paper, wood fiber, wood pulp, paper pulp.

I should say the facilities for making paper machinery here are good, but none is made.

LABOR AND WAGES.

The cost of labor in paper mills is as follows: Foremen receive up to $19.47 a week; boys, $3.65 per week, nine-hour shifts, fifty-six hours per week; women (working only from 8 a. m. to 5 p. m., and no overtime), from $4.38 to $5.11 per week.

IMPORTS.

In 1893, 1,836 tons of wood pulp were imported into the Tyne, and in 1898 10,126 tons. The following shows the quantities of wood pulp imported from each country into the River Tyne during 1898:

	Tons.
Coastwise	516
Germany	36
Belgium and Holland	233
Norway	6,539
Sweden	901
British America	1,901

The classes of paper imported include news, colored and white writings and printings, drawings, and cards; also wrapping papers and strawboards.

The imports of paper into the River Tyne during 1898 were as follows:

	Tons.
Coastwise	2,502
Germany	84
Belgium and Holland	351
Norway	680
Sweden	204
Denmark and Iceland	7
United States of America	127

Paper is also imported largely into this district from abroad and distributed by rail through the wholesale houses in London, Glasgow, etc., for which there are no returns available.

EXPORTS.

The total quantity of paper exported from the Tyne in 1893 was 5,153 tons, as against 4,015 tons in 1898.

The returns of exports from the Tyne during 1898 are as follows:

	Tons.
Coastwise	3,843
Germany	1
Belgium	28
Norway	28
Sweden	7
Denmark and Iceland	32
Austria, Turkey, and Greece	4
Egypt	1
United States	63
British America	8

There are no export duties.

BANKS, MAILS, AND TELEGRAPHS.

Most bankers in the United Kingdom issue drafts on all the leading colonial and foreign banks and have agents in London.

Mail and telegraph facilities are:

Letter post.—Germany, daily; Sweden, daily; United States, Tuesdays, Wednesdays, Fridays, and Saturdays.

Charge for telegrams.—Germany, 2d. (4 cents) per word; Sweden, 3½d. (7 cents) per word; United States, 1s. to 1s. 8d. (24 to 40 cents) per word.

AMERICAN PRODUCTS.

I think there is a market here for American paper, pulp, etc., providing the questions of price and freight can be solved. The Wilson Line has steamers running regularly direct from New York to Newcastle. The present rate of freight for paper and wood pulp from New York to Newcastle by these steamers is from $5.46 to $6.09 per ton.

To build up our exports, American exporters should establish either branch houses or agencies, and advertise.

TRANSPORTATION.

I can not ascertain the local rates for transportation as asked for, but give below the charges quoted by the railway company from points to and from paper mills (Shotley Bridge, Sunderland, Hylton, etc.):

Class A.—Articles used in the manufacture af paper.

Newcastle to Blackhill (for Shotley Bridge).—Distance, 18 miles; rags in 2-ton loads, station to station, $1 per ton; wood pulp, 4-ton loads, $1 per ton; old rope, $1 per ton.

Newcastle to Monkwearmouth (Sunderland).—Distance, 16 miles; paper-making materials, 2-ton lots, 85 cents per ton, station to station; delivered, $1.28 per ton; tarpaulin, 6-ton loads, 81 cents per ton; rags, not oily, 97 cents per ton, station to station.

South Dock, Sunderland to Blackhill (Shotley Bridge).—Distance, 26 miles; esparto grass, loose, minimum, 20-cwt. wagon, station to station, $1.82 per ton; hydraulic or steam pressed, 5 tons per wagon, owner's risk, station to station, $1.17 per ton; rags, in 2-ton loads, station to station, $1.72 per ton.

Tyne Dock, South Shields to South Dock, Sunderland.—Distance, 9 miles; loose esparto, minimum, 20-cwt. wagon, station to station, $1.05 per ton; rags, 2-ton loads, 91 cents per ton, station to station.

Northumberland Dock, North Shields to South Dock, Sunderland.—Distance, 25 miles; esparto, machine pressed, 2½ tons per wagon, $1.28 per ton; wood pulp, 4-ton lots, $1.05 per ton, station to station.

Newcastle to South Dock, Sunderland.—Distance, 18 miles; wood pulp, 4-ton lots, station to station, 85 cents per ton; paper-making material, 2-ton lots, station to station, 85 cents per ton; collected and delivered, $1.28 per ton.

Tyne Dock to Hylton, Sunderland.—Distance, 10 miles; esparto grass in bales, minimum, 5-ton lots, 71 cents per ton; 2½-ton lots, 81 cents per ton; esparto grass, loose, minimum, 20-cwt. truck, $1.11 per ton, station to station; paper-making materials, 4-ton lots, 79 cents per ton; wood pulp, 4-ton lots, 67 cents per ton; paper, in bales and bundles, delivered at owner's risk, $1.07 per ton.

Northumberland Dock, North Shields to Hylton, Sunderland.—Distance, 23 miles; 2-ton lots, $1.56 per ton; wood pulp, 4-ton lots, $1.11 per ton.

Sunderland to Tyne Dock, South Shields.—Distance, 7 miles; rags, not oily, 2-ton lots, station to station, 79 cents per ton.

Tyne Dock, South Shields to Blackhill (Shotley Bridge).—Distance, 24 miles; esparto grass, minimum, 20 cwts. per wagon, station to station, $1.70 per ton; rags, 4-ton lots, station to station, $1.22 per ton; paper-making material, $1.22 per ton, station to station; wood pulp, 4-ton lots, $1.11 per ton; esparto, in press-packed bales, 2-ton lots, $1.29 per ton; 5-ton lots, $1.09 per ton, at owner's risk, station to station; 4-ton lots, $1.22 per ton, at owner's risk.

Northumberland Dock to Blackhill (Shotley Bridge).—Distance, 26 miles; esparto grass, hydraulic pressed in iron-bound bales, 4-ton lots, $1.28 per ton; rags, 2-ton lots, $1.53 per ton; paper-making material, 4-ton lots, $1.28 per ton; wood pulp, 4-ton lots, $1.15 per ton, station to station.

Class B.—Products of paper mills.

Blackhill (Shortley Bridge) to Newcastle.—Distance, 18 miles; writing or fine paper and printing paper for books, $1.82 per ton delivered; coarse paper, delivered, $1.62 per ton.

Sunderland (Monkwearmouth) to Newcastle.—Distance, 16 miles; fine papers, $1.72; coarse papers, $1.28 per ton, delivered.

South Dock to Tyne Dock, South Shields.—Distance, 9 miles; paper in bales and bundles, $1.05 per ton, delivered.

South Dock, Sunderland to Newcastle.—Distance, 18 miles; paper in bales and bundles, collected and delivered, $1.28 per ton.

Sunderland to Tyne Dock, South Shields.—Distance, 7 miles; paper in bales and bundles, $1.05 per ton, delivered.

The above rates are all rail, and the weights given are 2,240 pounds to the ton.

HORACE W. METCALF,
NEWCASTLE-ON-TYNE, *February 14, 1899.* *Consul.*

USES OF WOOD PULP.

USES OF WOOD PULP.

DEPARTMENT INSTRUCTION.*

Department of State,
Washington, September 28, 1898.

Sir: In the interest of our lumber dealers and wood manufacturers, the Department desires to be informed as to the various uses to which wood pulp is applied in the manufactures in Europe.

A leading firm of chair manufacturers of Wisconsin, in soliciting this information, writes to the Department as follows:

> Vienna is one of the largest (chair) manufacturing cities in Europe, and we understand that wood pulp is being used there in the manufacture of chairs and other articles of furniture. I am led to believe that the Europeans have carried the use of wood pulp to a higher state of perfection than we have in the United States.

You are therefore requested to institute the necessary inquiries as to the various uses to which wood pulp is applied, and report the results of your investigation to the Department at your earliest convenience.

While the main inquiry will be into the uses of the pulp in manufactures, statistics covering the wood-pulp industry will add materially to the value of your report. This report should cover the manner in which the pulp is used in manufactures, the kind and quality of the finished goods and where they are manufactured, and the manner and place of production of the wood pulp.

Respectfully yours,

Thos. W. Cridler,
Third Assistant Secretary.

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* This circular was sent to consular officers in Europe. A report from Consul-General Bittinger of Montreal, on the wood-pulp industry in Canada is included with the answers received.

AUSTRIA-HUNGARY.

VIENNA.

Wood pulp is produced in considerable quantities in Austria-Hungary. The official statistics of the imports and exports of this article are as follows:

Imported into Austria-Hungary.

Year.	Quantity.	Value.
1897:	*Pounds.*	
Germany	56,100	$612.00
Sweden	44,880	489.60
	100,980	1,101.60
1896	294,580	3,333.60
1895	12,100	143.20
1894	62,260	821.20
1893	143,000	1,950.00

Exported from Austria-Hungary.

Year.	Quantity.	Value.
1897:	*Pounds.*	
Brazil	68,640	$748.80
Bulgaria	61,380	669.60
China	660	7.20
Egypt	1,320	14.40
Germany	3,273,380	35,709.60
Great Britain	83,600	912.00
Greece	24,200	264.00
Hamburg (free zone)	660	7.20
Italy	3,390,200	36,984.00
Japan	5,720	62.40
Netherlands	52,800	576.00
Roumania	44,220	482.40
Russia	3,231,360	35,251.20
Servia	62,700	684.00
Switzerland	755,700	8,244.00
Turkey	23,540	256.80
	11,080,080	120,873.60
1896	10,262,560	111,955.20
1895	8,713,760	102,981.00
1894	12,789,260	168,586.40
1893	12,277,100	167,404.00

Wood pulp that is produced by grinding and mechanical defibrination is manufactured in Austria-Hungary in two varieties. The kind most in use is white, and a small quantity of brown wood pulp also finds its way on the market.

The chief disposition made of the pulp is in the manufacture of the coarser kinds of printing and wrapping papers, when it is usually mixed with a small quantity of cellulose, the substance chemically produced from wood by boiling and lixiviation.

Some 18,000 tons of the wood pulp made in this country are used in the manufacture of pasteboard.

The statement that wood pulp is being used in Vienna in the manufacture of chairs and other articles of furniture is not altogether correct. Numerous experiments in this line have been made in Austria; but, in spite of all efforts, experience has proven that the adaptation of wood pulp for other purposes than for paper and pasteboard has not been commercially successful. Brown wood pulp, sized, pressed, colored, and varnished, has been employed for chair seats and also for the covering of walls in railroad carriages. The white pulp has been used in making utensils of various kinds and, in a less degree, frames and small decorative figures. At present, utensils of wood pulp are manufactured in Europe for sale to any extent only at Forbach, Lorraine. The employment of the pulp in these ways has not been encouraging and is now practically discontinued. Of course, experimenting still goes on; yet there is no general or recognized use in this country for the wood pulp outside of paper mills. As an instance in point, I may mention a factory near Grein, Austria, where the brown pulp was subjected to a special treatment of sizing and pressing. A pseudo leather was turned out, called leatherette, and also waterproof wall hangings. These efforts have been up to now only trials, as it has been shown that articles of wood pulp are ineffective substitutes for leather, linen, or wood. This same factory has made, from its sized waterproof pulp, interior walls and also roofs for large barracks; but these uses are also tentative, and experts are skeptical as to whether the material can resist the action of the weather.

Prof. Max Schubert, in his "Die Holzstoff- oder Holzschliff-Fabrikation," a treatise of some 150 pages, which has appeared within the month and which should be of interest to wood-pulp manufacturers, speaks of two experiments that he made with waste pulp extracted from the water used in the production of the pulp. Being obliged to filter the water used in the pulp making, large masses of refuse pulp accumulated which were unfit to mix with good wood pulp. To put the stuff to some practical use, he molded brick-like blocks from the moist heaps. These blocks were at first exposed to sun and air, and later thoroughly dried by artificial heat. The result, Professor Schubert states, was a satisfactory building stone, which was unusually light, hard, and so tough that it was impossible to break it by hand when struck on sharp iron corners. Further, these blocks could be readily sawed and worked like wood.

The favorable outcome of this experiment led Professor Schubert to utilize other waste in the wood-pulp factory. He took portions of dirty pulp sweepings, sawdust, and bark and added to these a portion of the waste pulp taken from the water, and lastly an admixture of clay. These ingredients he had evenly ground in edge rollers, then moistened with water and well mixed. From this stiff substance he framed bricks, which he dried in the manner employed in the first process. The form of this brick was more regular and more sharply defined than that made from water refuse alone, and was not so tough, but the weight was greater, although much less than that of an ordinary clay brick. A brick of the first variety weighed about 1 pound 3 ounces, and a brick of the different ingredients weighed a trifle over 2 pounds. Subjected to furnace heat, it burned only slightly and that after long contact with the flames. Thousands of these blocks were made and put to practical test by a builder, who reported that he had used them in a number of houses, where they were especially to be recommended in constructing light, warm walls. Plaster on walls made of these blocks dried quickly and adhered well. He wondered at their toughness and endurance.

When the Scandinavian Wood Pulp Union, in Christiania, offered prizes, open to all countries, for the best method of keeping back the waste fibers from the water leaving the factories and of utilizing this waste pulp, Professor Schubert submitted his process and received one of the four rewards. He has also had his brick blocks patented in Germany.

Another use to which wood pulp is put in this country is in a patented composition used for flooring and called xylolith (papyrolith and stone wood). In the circulars issued by the manufacturers of this flooring in Vienna, the preparation is described as highly satisfactory. Some 60,000 square yards have been laid in Austria-Hungary in various offices, hospitals, schools, factories, hotels, and in other much-frequented buildings. This flooring is put on a wood or a cement foundation, in a thickness of from 12 to 15 millimeters (about half an inch). Yellow is the usual color, although the material can be prepared in red, brown, or white, and also in variegated designs. The makers say that the flooring can be laid only by their trained craftsmen, and recommend that in damp or much-used rooms there should be a basis of béton, preferably of Portland cement, from 5 to 12 centimeters (2 to 2⅘ inches) thick. This basis must be hard and free from dust, perfectly level, but roughly finished, so that the wood-pulp composition may adhere more firmly. The xylolith hardens under ordinary circumstances in twenty-four hours, whereupon it is smoothed and washed, and is then ready for use. Eight or ten weeks after the composition has been laid, and at least once a year thereafter, the flooring should be thoroughly rubbed with linseed oil. Wax gives the surface a higher polish, but, incidentally, makes walking uncertain.

The manner of making wood pulp in Austria-Hungary seems to resemble the methods employed in other countries. The wood (pine is generally used here) is brought into the factory and cut in lengths of about 20 inches. Pieces partially decayed are thrown out and the rest is stripped of bark. If these billets are too large, they are split. The wood is now brought to a so-called defibrinizer. This machine consists of a cylinder of sandstone, of not too fine grain and about 40 inches in diameter. The wood, confined in several cast-iron compartments, is forced generally by hydraulic pressure against the revolving stone, on which jets of water are thrown. A cylinder of 40 inches in diameter is made to revolve about one hundred and sixty times a minute. After the wood has been ground in this manner, splinters and chips are extracted from the fluid mass by means of a large vibrating sieve, and the pulp then goes to a sorting machine. The coarse fibers retained by this machine are placed in a refiner and then reduced by millstones to a consistent mass. The fibers are now brought to another machine, where the water is expressed. In manufacturing paper, the wood pulp containing 60 per cent of water is used, and if the pulp is to be stored for later consumption it is pressed until there is but 10 per cent of water left. When finally used it is softened in vats, finely ground, and then brought into the paper machines.

Brown wood pulp is produced by steaming. After the wood is cut the length of the compartments of the defibrinizer, the bark is taken off, although this is done more easily after the steaming. The pulp is not, however, so fine if the bark is left. The blocks are now put in vats, and steam is introduced to a pressure of 4 or 5 atmospheres. The color of the pulp varies according to the time the wood is steamed, running from pale yellow to dark brown. Usually, the wood is steamed under a pressure of 5 atmospheres from eight to fourteen hours. The grinding of the steamed wood is performed as in making the white pulp, and the remaining stages are similar to those in the manufacture of the more used variety.

The addresses of manufacturers of wood pulp in Austria-Hungary, as requested by the Department, are given in the following list. The particular pulp, white or brown, usually produced by each firm is specified.

Admont'sche Stift, Holz- und Patentpappenfabrik, in Admont; white.

Adolf & Dix, in Grossaupa; white.

L. Appeltauer & Sohn, in Grossaupa; white.

Adolf's Filipp Erben, in Grossaupa; white.

Adolf Bachmann, in Waldstein.

Basel & Co., in Dickenau; white.

Carl Baumann, in Neudeck; white.

Ferdinand Blaschke, in Thörl-Maglern; white.

W. Böhm, in Schwarzenthal; brown.

"Bohemia," Holzstoff- und Holzpappenfabriken Liebsche Strobel & Co., in Georgendorf; white and brown.

Josef Brunegger, in Bruck-am-Mürz; white.

A. Diamantidi, in Freiland.

G. Diethelm, in Wien; white.

M. Dubsky, in Salmthal; white.

Dürnsteiner Holzstoff- und Pappendeckel-Fabrik Franz Zeilinger, in Friesach; white.

Einöder Holzstoff- und Pappendeckel-Fabrik; white.

Julius Eisenhuber, in Kirchberg-am-Wagram; white.

Th. Endmoser, in Salzburg; white.

M. Erlebach, in Niederhof.

Fritz Faltis'sche, Güterdirection, in Weckelsdorf.

D. J. Feuerlöscher, in Graz; white.

Joh. A. Fiebiger & Co., in Freiheit; white and brown.

Joh. Ch. Fleischhacker, in Raufen; white.

Andreas Forabosko, in Bruck-am-Mürz; white.

Forstverwaltung Seebenstein; white.

Ignaz Fuchs, in Neudeck; white.

Franz Fuchsbichler, in Kainach; brown.

Wilh. Fürth, in Graz; white and brown.

C. Gallin, in Vellach; white.

Hans Gasser, in Thalhof bei Hermagor; white.

Gersheim & Veit, in Freistritz-am-Drave; white.

J. Goldfinger, in Neumarkt; white.

G. Gregory, in Greifenthurn; white.

Hirschwanger Holzschleiferei und Holzstoffwarenfabrik Schoeller & Co., in Hirschwang; white and brown.

Dr. Ludwig von Hoffer & Alexander Pesendorfer, in Uibelbach.

Hermann Hofer, in Dunkelthal; white.

Holzschleiferei Stadelbach Max Rothauer; white.

Holzstoff- und Holzstiftenfabriks-Actien-Gesellschaft, in Sandhübel; white.

Julius Janowitz, in Rochvalva; white.

Franziska Kafko, in Köflach; white.

J. Kaiser, in Königinhof; white.

Jacob Kavallar, in Paternion-Feistritz-am-Drave; white.

Heinrich Kneifel, in Jungbuch; brown.

Rudolf Kneifel, in Grossaupa; white.

J. Ernst Kolb, in Schlackenwerth; white.

Josef Kraus, in Schwarzenthal; white.

Krinsdorfer Holzstoff- und Pappenfabrik, Weigend & Wacha, in Krinsdorf; white and brown.

Moritz Krisch, in Gröditz; white.

Oswald Kühn, in Altkinsberg; white.

"Leykam-Josefsthal" Actien-Gesellschaft für Papier- & Druck-Industrie; white and brown.

Lipto-Rosenberger Actien-Gesellschaft für Holzstoff- und Pappenfabrikation; white.

Lipto-Szt.-Mikloser Holzstoff- und Pappendeckel-Fabriks-Gesellschaft; white.

Löwenthal, Schmied & Co., in Vienna; brown.

Menzel Lorenz, in Marschendorf; white.

Mahla, Gebrüder, in Gablonz-am-Neisse; white and brown.

Joh. Memmer, in Weissbriach; white.

Simon Michor, jun., in Nötsch a. d. Gail; white.

Mohr Gebrüder, in Witkowitz; white.

"Moldaumühl" Cellulosefabrik, Brüder Porak, in Kienberg.

Anton L. Moritsch, in Villach.

Carl Müller, in Schwiblingkirchen; white.

Joh. & A. Müller, in Fellbach; white.

Ernst Naundorff, in Merkelsgrün; white.

A. & F. Nettl, in Tafelbauden bei Hohenelbe; brown.

Alois Olbrich, in Leoben; white.

J. O. Petzold, in Eisenstrass; white.

J. Pretz, in Mittewald a. E. bei Franzensfeste; white and brown.

Wilh. Richter, in Grossaupa; white.

J. Roemer & Co., in Nettingsdorf.

Rohrbacher & Stromminger, in Maria-Zell; white.

Ch. & J. Ronacher, in Weissbriach bei Hermagor.

Albert Sagasser, in Petzer bei Grossaupa; white.

Schlesinger-Funck & Co., in Voigtsgrün bei Neudeck; white.

Franz Schmidt, in Freiheit; white.

Seutter'sche Fabriken, in Seebach; white and brown.

Franz Taurer, in Dellach; white.

J. Taurer, jr., in Dellach; white.

Thun'sche Gräfl. Holzstoff- und Papierfabrik "Schlossmühle," in Tetschen.

Vacano Brüder, in Prinzthal; white.

Wenzel Veit, in Witkowitz; brown.

Waissnix Gebrüder, in Reichenau; white.

Wilhelm Weber's (Nachflger. Max Coulon), in Feldmühle; white and brown.

Carl Weiss, in Klein-Morau; white.

J. Weissenböck, in Waldstein; white.

Carl Wolff, in Duel; brown.

K. Wührer, in Hefeld; white.

The duty on importations of wood pulp into Austria-Hungary is 1 crown gold for each 100 kilograms (23.5 cents for 220 pounds).

CARL BAILEY HURST,
VIENNA, *December 12, 1898.* *Consul-General.*

PRAGUE.

The manufacture of wood pulp in Bohemia, which used to be an important industry, has almost entirely ceased since enough wood pulp has been manufactured in the United States for home use.

The following statistics will clearly demonstrate the fall in the export trade from here to the United States, viz:

Export of wood pulp from Prague.

Year.	Value.	Year.	Value.
1887	$12,487.94	1892	$122,899.26
1888	26,320.08	1893	80,365.82
1889	51,340.66	1894	62,498.15
1890	99,992.44	1895	79,512.19
1891	100,826.49	1896	2,498.52

At the present date, only a quantity that may be readily consumed for paper is manufactured. I understand that wood pulp is also used to some extent in other portions of Austria-Hungary in the manufacture of buckets, dishes, and toilet articles; but I can report only in regard to conditions in my consular district.

The wood of which pulp is manufactured is pine, which is cut into small pieces by a circular saw. Each piece is run through a contrivance to remove the bark, and is further cleaned either by hand or, in some factories, by a rotary brush run by steam or water power. Knots are removed by a borer made especially for that purpose. While the timber is being sawed, any decayed portion is at once thrown aside. The pulping machine consists of a large grindstone, which makes from 700 to 1,500 revolutions a minute. Directly over the grindstone are four or five cast-iron boxes, into which the wood to be pulped is put. These cover about one-third of the surface of the grindstone, and are so connected with the motive power that the pieces of wood are always pressed against the grindstone, which gradually transforms the wood into a fibrous mass. The boxes are so arranged that only one at a time will become empty, and it is thus never necessary to stop the stone, as each box can be filled without interfering with the others. Immediately above these feed boxes (so called) is arranged a water pipe, from which a small stream of water is forced continuously upon the grindstone, which carries off the coarse ground mass into troughs. The mass is ground again between two stones, which are so cut as to transform the same into the very finest pulp. It then passes through filterers of various fineness. The water is pressed out, the pulp is cut into slabs, and is then ready for use or shipment. The mass too rough to be pulped is formed into bricks and dried in a kiln until very hard. These are called in the market wood bricks, and are used by builders in the inside walls of houses. The only places in Bohemia where wood pulp is manufactured are in Kamnitz, in Kienberg, and in Vestersitz, where it is used in the manufacture of paper.

HUGO DONZELMANN,
Consul.

PRAGUE, *November 8, 1898.*

TRIESTE.

In response to the inquiry made by circular, I have to report that the wood-pulp industry does not exist in this district.

BASIL BRYCE,
Vice and Deputy Consul.

TRIESTE, *December 5, 1898.*

BELGIUM.

ANTWERP.

As far as it has been in my power to ascertain, and from information gained from those in the best position to know, the use of wood pulp is confined in this country to the manufacture of paper. I have been told, however, by a Paris importer, with whom a sample lot of about 200 tons of the American product has been placed, that there are manufactories of cardboard in France using the brown wood pulp (half chemical) in making leather cardboard for furniture. I have not been able to ascertain the quantity consumed in this way.

Within the past year, my attention has been directed to the fact that many varieties of so-called wood pulp exist, prepared chemically or otherwise, according to the use for which they are destined—for instance, dry ground pulp, sulphite, soda, and wet mechanical-ground pulp.

The only inquiry that has been made at this office for the American product has been for the bleached dry-soda pulp. The great bulk of the pulp imported into Belgium is, I am informed, of the crude variety, and is treated chemically by the paper manufacturers according to their requirements.

During the year 1897, 65,078,543 kilograms (143,472,156 pounds) of the various varieties of pulp were imported for consumption into this country and 35,148,844 kilograms (77,896,419 pounds) exported.

Of the total of the importations above given, 44,896,419 kilograms (98,978,645 pounds) were the product of Norway and Sweden, 19,404,984 kilograms (43,880,228 pounds) came from Germany, and 2,391,065 kilograms (5,271,342 pounds) were brought from the United States.

The crude pulp is admitted free of duty, provided that it is so perforated that it can not be used except for manufacturing purposes. The perforation can be made by the manufacturer at or before the time of shipment. Pulp imported in dry leaves, which may be used in the state in which it is manufactured, is subject to a duty of 4 francs per 100 kilograms (77 cents per 220.46 pounds).

I know of but one establishment engaged in the treatment of wood pulp by sulphur; it is located at Willebroeck, in this consular district. The annual production of this establishment is said to be from 8,000 to 10,000 tons, the greater part of which is exported to France, England, and Spain. It sells in the market here for about the same price as the Norwegian product of the same quality. There is no manufactory of the mechanical sort here. The total production of all grades, variously treated at different points within the Kingdom, is estimated at about 70,000 tons annually.

The ruling prices for the Scandinavian varieties on this market are: Mechanical, air dried and well ground, is quoted at 105 to 110 francs ($20.26 to $21.23) per ton c. i. f. Antwerp; unbleached soda pulp, dry, from 205 to 215 francs ($39.57 to $41.50) per ton c. i. f.; unbleached sulphite, from 205 to 225 francs ($39.57 to $43.42) per ton, according to quality. At the same time, American bleached soda pulp was quoted at 240 to 245 francs ($46.32 to $47.28) per ton c. i. f.

The number of large paper manufacturers is limited. Following is a list of those known here as making use of pulp in some form in their works:

Société Anonyme des Papeteries de Limal, Limal.
Société Anonyme des Papeteries de Gastuche, Gastuche.
Société Anonyme de l'Union des Papeteries, Bruxelles.
Société Anonyme des Papeteries de l'Escaut, Gentbrugge.
G. Steevens, Droogenbosch.
P. Stevens, Lembeck.
F. Deleroix, Boulers.
De Broux & Co., Noirhat.
G. Demeurs & Fils, Huysingen.

Demeurs Frères & Saurs, Rhode St. Genèse.
De Nayer & Co., Willebroeck.
A. Deleplanques, Bruges.
H. Nyssen, Gand.

GEO. F. LINCOLN,
Consul-General.

ANTWERP, *October 31, 1898.*

BRUSSELS.

In this consular district, wood pulp is used exclusively in the manufacture of paper of all description, including card and paste board, and is employed by only one firm—Le Union des Papeteries, of Brussels. Some twenty years ago, the above-named firm manufactured the wood pulp required in its paper-making industry, but later it discontinued this, as the cost of manufacture exceeded the price of the imported article.

About 25,000 tons of cellulose are annually manufactured in Belgium, of which a large part is exported to foreign countries, principally to Spain.

IMPORTATION.

The total importation of wood pulp into Belgium for consumption during the year 1898 was 65,078,543 kilograms (143,172,795 pounds), valued at about 9,110,996 francs ($1,758,422.22). The average price per kilogram (2.2046 pounds) was 14 centimes (2.7 cents).

Imports into and exports from Belgium of wood pulp during the year 1897.

From and to—	Imports.		Exports.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*
Argentine Republic			735,611	1,618,344
Brazil			1,369,684	3,013,305
Cuba and Puerto Rico			112,688	247,914
Denmark	75,815	166,793	56,362	123,996
England	242,506	533,513	5,109,124	11,240,073
France	79,345	174,559	10,582,375	23,281,225
Germany	19,404,984	42,690,965	1,181,935	2,600,257
Hamburg	144,239	317,326		
Holland	747,885	1,645,347	1,014,760	2,232,472
India			53,350	117,370
Italy			1,079,075	2,373,965
Norway	26,243,235	57,735,117		
Portugal			190,168	418,370
Russia	518,386	1,140,449	6,215,277	13,673,609
Spain			5,508,583	12,118,883
Sweden	18,653,184	41,037,006	43,777	96,309
Switzerland	384,762	846,476		
United States	2,391,065	5,260,343	1,677,865	3,691,303
Other countries	84,713	186,369	218,210	480,062
Total	68,970,119	151,734,262	35,148,844	77,327,457

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *October 28, 1898.*

FRANCE.

MARSEILLES.

Although I can not find that wood pulp is utilized by any local manufacturers, I am informed that it is used very largely in other parts of Europe, the manufactured products finding ready sale here. Leather is very successfully imitated with this material and made sufficiently tough and durable to answer for chair bottoms and backs. The imitation leather can be decorated elaborately, and furniture of this sort sells at reasonable prices. Children's games, balls, ninepins, and a thousand and one novelties are also put on the market by manufacturers whose ingenuity is taxed to produce something cheap and attractive.

The woods used to make the pulp are pine and beech. Beech is preferred, and beech pulp is made in Austria, Italy, Switzerland, and Germany. The pulp itself seems to be most successfully employed in Austria. Pulp from pine is made in Germany, Norway and Sweden, and Russia. The residue of the pulp—that is, the knots and hard pieces which do not become entirely soluble—is compressed into bricks weighing about 2 pounds each, and these are used for fuel.

This suggests another matter. In Europe, the vast quantities of sawdust which one sees in the timber country of the United States would be carefully prepared for market, just as coal refuse is here compressed into briquettes. Thousands of tons of coal briquettes can be seen at any time on the wharfs of Marseilles, made of no better material than goes to waste at many an American coal mine.

ROBERT P. SKINNER,
Consul.

MARSEILLES, *October 18, 1898.*

RHEIMS.

My investigations have been confined to the establishment of Mr. A. Arnoult, in the town of Sézanne, Department of Marne.

Mr. Arnoult says that he controls the manufacture in France of the "bois durci," or wood pulp hardened by chemical manipulation, and that he knows of no other house engaged in the fabrication.

It is very difficult for consuls of the United States to obtain information from French manufacturers, because they are jealous of the fast-growing importance of our country as an exporter of manufactured goods. I have had considerable correspondence with

Mr. Arnoult, and I forward herewith two of the letters received, with translations.

The following is a summary of the information I have been able to obtain:

There has been no book published upon the subject in France.

The manufacture of the "bois durci" is not very important for the following reasons:

(1) On account of the great expense of the outfit.

(2) The difficulty of having the wood entirely uniform in hardness, grain, and age at time of use, which is necessary to produce proper results.

(3) The difficulty of procuring suitable workmen.

Chairs, Mr. Arnoult says, can not be made of wood pulp, and he is of the opinion that the chairs made in Austria and Hungary are made from bent wood. No manufacture similar to the Austrian product exists in France.

Pails are made from wood fiber and some sticky substance of which he does not know the nature, but they are not made in France.

The nearest approach to the bois durci is the "caoutchouc durci," and names are given of two houses in France engaged in this manufacture. The product is probably the same as the vulcanized rubber of the United States.

I have made many inquiries, and have written for information from other sources, but as yet have failed to receive anything additional upon the subject.

WM. A. PRICKITT,
Consul.

RHEIMS, *December 13, 1898.*

TRANSLATIONS OF LETTERS FROM MR. ARNOULT TO MR. PRICKITT.

SÉZANNE, *December 1, 1898.*

The manufacture of the "bois durci" is not so important as many persons seem to think. I am, I believe, the sole manufacturer. I do not know of another house, even in foreign countries, which really manufactures bois durci.

The production is limited, because it needs a very extensive outfit, requiring much capital, and on that account greatly diminishing the profits; also because of the different results obtained from the analysis of the same wood at different times, on account of the matter becoming naturally chemically disorganized, either by desiccation, evaporation, or fermentation of the resinous parts, acids, etc.; and the success of the bois durci becomes a matter of chance under these analyses.

The mechanical outfit is not large. Certain persons have tried to establish this manufacture in different countries—in London, in Germany, in Brazil, and, if I am well informed, in the United States. None, I believe, have succeeded.

I have unsuccessfully tried to introduce my goods into Brazil, the United States, and England.

The necessary workmen are difficult to procure. It is only after one year's apprenticeship that a workman is at all capable, and even then he must have a special aptitude and taste for the business.

This manufacture is not recent; it is over twenty years old. There is no book published upon the subject.

SÉZANNE, *December 9, 1898.*

There is no secret in my work, the transformation not being visible.

As I have said, I do not know of other houses in France engaged in this manufacture. The product most resembling the bois durci (and then in color only) is the caoutchouc durci (hardened rubber). This fabrication is employed for different uses. These goods often get out of shape when subjected to varying temperatures.

There are several establishments making these goods: Torrilhon & Co., Chamaliers, Department Puy-de-Dôme; Michelin & Co., Clermont-Ferrand, Department Puy-de-Dôme.

GERMANY.

REPORT FROM CONSULATE-GENERAL AT DRESDEN.

The wood-pulp industry is divided into two distinct classes, viz, mechanical wood pulp and chemical wood pulp. The Kingdom of Saxony takes the lead in the production of wood pulp in the German Empire, inasmuch as the wood pulp produced in Saxony occupies 260 paper mills—nearly 45 per cent of the total number in Germany, which is 580. Saxony is rich in water power, and this fact has mainly determined that it should become the center for this production.

MECHANICAL WOOD PULP.

Since the invention of wood pulp in about 1860, by Fr. Gottlob Keller, the manufacture has extended over all the pine-wood districts of Europe and America. The immense importance of this material for the manufacture of cheap paper, especially printing paper, was for the first time demonstrated at the Paris International Exposition in 1867, creating general and widespread astonishment in industrial circles. From that time, this industry has rapidly developed. About 1884–85, the production of wood pulp exceeded by far the demand of the paper mills, because Norway, Sweden, and Finland, which up to that time had supplied the English market, succeeded in obtaining control of the French and Belgian demand. To avoid the impending depression in price, a large number of grinding mills started to manufacture pasteboard, but this effort also soon resulted in overproduction.

In 1887, the first general meeting with the object to establish a uniform market price for wood pulp was held at Cologne. This meeting covered about 15 mills, with a normal production of 9,000 tons of air-dried material, or a freight weight of about 24,000 tons.

The price for the best quality of white-pine pulp was fixed at 13.50 to 14 marks ($3.21 to $3.33) per 100 kilograms (220.46 pounds) air-dried material, against 11.50 marks ($2.73) before the meeting. This convention lasted about three years. In 1890, it was dissolved on account of the large number of new mills that could not be induced to join the agreement. The free competition, which was the natural consequence, was by no means beneficial to the industry, the overproduction assuming such proportions that the pulp at times sold as low as 7 marks ($1.66) per 100 kilograms. It was evident that this state of affairs could not last. In 1893, 87 Saxon concerns united and formed a syndicate, with general sales rooms in Dresden. Shortly afterwards, 27 Silesian firms formed a second syndicate, also with general sales rooms in Dresden; and finally 24 Bavarian and other southern German mills formed a third syndicate, with general offices in Munich.

The mills producing wood pulp are divided into three classes:

(1) Mills that produce only white wood pulp for sale to paper factories.

(2) Mills that produce only white pulp for direct use on their own paper machines.

(3) Mills that produce white and brown wood pulp for the manufacture of pasteboards or wrapping paper.

These three groups are divided into five districts:

(1) The Kingdom of Saxony.

(2) The province of Silesia.

(3) Southern Germany (Baden, Alsace, Wurttemberg, and Bavaria).

(4) Western Germany (Rhine Province and Westphalia).

(5) Central and North Germany and the Harz districts.

The following table gives accurate statistics as to the production of mechanical wood pulp, under normal water conditions, for the year 1896. The figures represent tons of air-dried material.

District.	First class (white material for sale).		Second class (white material for own use).		Third class (white and brown material).		Total.	
	Number of mills.	Annual production.	Number of mills.	Annual production.	Number of mills.	Annual production.	Number of mills.	Annual production.
		Tons.		*Tons.*		*Tons.*		*Tons.*
Saxony	146	39,800	49	35,750	70	25,450	265	101,000
Silesia	49	12,130	12	5,730	31	14,500	92	32,660
South Germany	47	26,960	20	16,200	25	14,400	92	57,560
West Germany	16	9,470	5	1,400	7	3,300	28	14,170
Central Germany	32	10,310	13	8,420	41	23,950	86	42,680
Total	290	98,970	99	67,500	174	81,600	563	248,070

The market value was as follows:

Description.	1891.		1893-1896.	
	Marks.		*Marks.*	
For white stuff (first and second class)............per 100 kilograms*...	10.00	$2.38	11.50	$2.74
For pasteboard and brown material (third class).....per 100 kilograms...	13.00 to 17.00	$3.09 to $4.04	15.00 to 20.00	$2.50 to $4.76

* 100 kilograms=220.46 pounds.

Total estimate: In 1891, about 30,000,000 marks ($7,140,000); in 1893–1896, 33,000,000 marks ($7,854,000). The quantity of wood used is estimated at about 685,000 cubic meters (24,191,871 cubic feet), of which three-fourths is pine wood. The requisite power to produce this quantity is estimated at 70,000 horsepower, of which 8,500 horsepower was produced by steam.

The working of the syndicates has proven to be entirely satisfactory, and there is no reason to believe that any change will be made for the present.

As to the uses of mechanical wood pulp for manufactures other than paper, it might be briefly said that it is very limited, although the most extensive efforts have been made in this direction, and hardly represents 1 per cent of the quantity of wood pulp which is thrown on the market every year. Such other articles are: Vases, tubs, jars, barrels, and all kinds of vessels to keep liquids, provided they are free from acids; imitation of stucco for decoration of ceilings, curtain poles, and a number of similar manufactures of little or no industrial importance.

The use of wood pulp for the manufacture of chairs and furniture is absolutely unknown in this district, nor has the president of the Saxon syndicate, whom I consulted personally on this special subject, ever heard of the material having been used for such purpose.

A few years ago, a prize of 2,000 marks ($476) was offered by the union of the German Woop-Pulp Industry to ascertain whether wood pulp could possibly be used to any extent in manufacturing articles other than paper, but the result was a complete failure. At one time, an attempt was successfully made in manufacturing houses for tropical countries, with the special object of making them proof against the attack of the "termites" (tropical ant). To accomplish this, cement and magnesite were mixed with the pulp, but the sale of such dwellings amounts to almost nothing.

Mechanical wood pulp is not imported into Germany, as there is rather an overproduction within the country; only in exceptional cases—especially in very dry years—is it imported in small quantities from Canada or Sweden. It has been found impossible for the

German mills to compete with those of Norway and Sweden, on account of heavy land freights.

The largest factories of mechanical wood pulp in Saxony are those of Zacharias, in Pirna-am-Elbe, and Unger, in Dohna near Dresden.

The imperial duty on mechanical wood pulp is 1 mark (23.8 cents) per 100 kilograms (220.46 pounds).

CHEMICAL WOOD PULP.

The process of manufacturing chemical wood pulp was first invented about 1869; but the method was very expensive, and the production remained on a small scale.

In 1875, however, Prof. Dr. A. Mitscherlich discovered a much cheaper method, which differed mainly from the above in the use of sulphate of lime, instead of expensive soda, for dissolving the wood.

The first large factories of chemical wood pulp (in German, "Sulfitcellulose") were started in 1879. The price paid at that time by the paper factories for this material was from 44 to 50 marks ($10.47 to $11.90) per 100 kilograms (220.46 pounds), while the cost of production amounted to about 27 marks ($6.43). This handsome profit, of course, caused a rapid increase in the number of factories. The result was disastrous to the trade. The considerable overproduction ran the price down to 30 marks ($7.14) per 100 kilograms for the best quality in 1886; in 1887–88, the price sank to 27 marks ($6.43); and in 1889–90, to 26 marks ($6.19) per 100 kilograms. In addition to this, the strong Swedish, Norwegian, Austrian, and, finally, the American competition contributed materially to the general depression in price.

This state of affairs rendered the formation of a syndicate indispensable. This was accomplished in 1891. The working of the syndicate has been most satisfactory to the members up to the present date.

The following table shows the history of the development of this industry:

Year.	Factories in Germany.	Annual production in metric tons.*	Market value of the product.		Average price per 100 kilograms (220 pounds).		Value of exports.	
	Number.		*Marks.*		*Marks.*		*Marks.*	
1882	5	6,000	2,750,000	$654,500	46	$10.95	....	....
1884	23	28,700	9,500,000	2,261,000	33	7.85	2,333,333	$555,254
1887	45	77,500	20,000,000	4,760,000	26	6.19	4,666,666	1,110,500
1890	50	118,000	28,333,333	6,693,000	24	5.71	7,000,000	1,666,000
1896	57	170,000	32,300,000	7,687,400	19	4.52	6,000,000	1,428,000

* 2,204 pounds.

Year.	Quantity exported.	Consumption of wood (mostly pine).		Coal consumed.	Chemicals consumed (common sulphur, sulphide of iron, and lime).		Capital invested in factories.	
	Tons.	*Cu. meters.*	*Cu. feet.*	*Tons.*	*Marks.*		*Marks.*	
1882	....	3,800	134,203	10,000	165,000	$39,270	2,500,000	$595,000
1884	7,000	172,000	6,074,455	45,000	650,000	154,700	11,750,000	2,796,500
1887	18,000	440,000	15,539,304	110,000	1,700,000	404,600	24,500,000	5,831,000
1890	29,000	650,000	22,955,790	160,000	2,000,000	476,000	30,000,000	7,140,000
1896	32,000	850,000	30,019,110	195,000	3,060,000	728,280	35,000,000	8,330,000

For the year 1898, the production is estimated at at least 200,000 tons, while a decrease in the export of about 25,000 tons is considered a certainty.

The use of chemical wood pulp for manufactures other than paper is also very limited. Successful efforts have been made in the manufacture of textiles, but there are no factories in this consular district. Artificial silk—patent chardonnet—is made in France. Raw textures for carpets, curtains, and such stuffs that need not be washed too often are made out of chemical wood pulp, but also on a limited scale. There is one spinning mill for cellulose yarns in Leipzig, but none in this district.

Chemical wood pulp is imported into Germany in quite large quantities, especially from Scandinavia and Austria, and sometimes even from Canada.

The present market price of chemical wood pulp imported from foreign conntries is, for best quality, £9 5s. ($45.02) per ton, duty paid and free at place of use.

The German duty is the same as for mechanical wood pulp. The largest factories for chemical wood pulp in this district are: Hoesch & Co., in Pirna; O. Harlan, in Heidenau, near Dresden.

Chas. L. Cole,
Consul-General.

Dresden, *October 26, 1898.*

REPORT FROM CONSULATE-GENERAL AT FRANKFORT.

In compliance with instructions from the Department, I have to report that, according to latest statistics, there are in Germany 601 mills for the manufacture of chemically and mechanically prepared wood pulp, the former of which is commercially known in this country as "cellulose." The combined product of all these mills, of which 260 are located in the Kingdom of Saxony, is about 400,000,000 kilograms per annum, or 400,000 metric tons* of pulp, valued, at the average prices of 1897-98, at about $9,520,000.

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*Of 2,204 pounds.

Besides the home product, Germany has imported, during the first eight months of the present calendar year, 10,621 tons of wood pulp from four European countries, as follows: From Finland, 1,458 tons; from the Netherlands, 176.5 tons; from Austria, 6,208.8 tons; and from Sweden, 1,698 tons.

During the same eight months, there were exported from Germany 38,755 tons of wood pulp, of which 10,304 tons went to France, 815.5 tons to the United States, and the remainder to Great Britain, Russia, Switzerland, Italy, Spain, and Argentina in the order named.

Wood pulp is known commercially in three forms, according to the process by which it has been prepared, as follows:

First. Simple wood pulp (in German, "Holzstoff") is wood fiber that has been reduced to pulp by mechanical means—that is, grinding in power mills without the action of chemicals.

Second. "Cellulose," or chemically prepared wood pulp (in German, "Holzzellstoff"), which is made by one of two processes:

(*a*) By the use of sulphurous acid as a solvent, in which case the product is known as "sulphite pulp."

(*b*) Where the chemical used is caustic soda, and the finished product is called "soda pulp."

German cellulose ranks very high in quality, due not only to the high standard of chemical skill that is employed in its manufacture, but also to the long, silky fiber of the wood, "Tannenholz," that is mainly used in this country. German cellulose is used in France for making some of the finest grades of stationery and certain articles of papier-maché.

Almost the entire output of wood pulp and cellulose, as well as the imported supply, is used for the manufacture of some form or quality of paper, although a considerable quantity is used as material for filters in breweries and sugar factories. It is also used to some extent as material for papier-maché, as, for instance, by the firm B. Harras, at Gross-Breitenbach, in Thuringia, which makes, among articles from cellulose, panels and artistic forms in imitation of wood carving for decorating furniture and other purposes.

I can find no one who knows anything of the manufacture of chairs or other articles of furniture from wood pulp, as suggested by the correspondent who is quoted in the instructions of the Department now under consideration. The nearest approach to this is the manufacture of chair seats from pressed wood pulp by the firm Gebrüder Adt, in Forbach, Alsace, who also make other articles of decoration and luxury from the same material.

Another important use of cellulose is as a material for the production of nitrocellulose, which in turn forms the principal material used in the manufacture of celluloid, out of which a vast range of articles, from jewelry to brushes, collars, and surgical instruments, is made. Celluloid was originally produced from gun cotton and camphor, but modern chemistry has substituted nitrocellulose made from wood fiber for the same substance formerly made from cotton.

The manufacture of wood pulp and paper in this district is largely concentrated at Aschaffenburg, Bavaria, besides which there are three detached and independent cellulose factories, as follows:

Cellulosefabrik P. H. Offenheimer, at Okriftel-on-the-Main.
Cellulosefabrik A. Bierhauer, at Löhnberg, Hesse-Nassau.
Cellulosefabrik Kostheimer, at Kostheim, near Kastel.

For a detailed description of the methods and apparatus employed in the manufacture of chemically prepared wood pulp by the Mitscherlitch process in the Frankfort district, reference is respectfully made to a special report on that subject which was made from this office and published in CONSULAR REPORTS No. 152 (May, 1893). The materials, processes, and machinery therein described are the same as those which are in use to-day.

FRANK H. MASON,
Consul-General.

FRANKFORT, *November 7, 1898.*

MANUFACTURE OF WOOD PULP IN GERMANY.

[Reprinted from CONSULAR REPORTS No. 152.]

Nothing can more forcibly illustrate the supremacy of the German people in all that relates to the application of chemistry to practical manufacture than the enormous development of the wood-pulp industry in this country during the past ten years. This development is the more remarkable because it has been achieved in the face of several serious disadvantages, with which the pulp makers of several neighboring countries—notably Sweden, Norway, and Austria—have not to contend. In Scandinavia and the Austrian Empire, the forests are of vast extent and mainly native growth, whereas in Germany they are largely artificial, planted and grown under Government supervision. Wood is therefore nearly twice as costly here as in the other countries named; labor, coal, and railway freights are higher; while water power and interior water transportation are comparatively limited.

But, notwithstanding all these obstacles, the German chemical-pulp industry has developed until its annual production is now 150,000 tons, of which one-third is exported and the remainder consumed in this country. Ten years ago, most of the wood pulp produced in Germany was manufactured by the soda process; since then the superiority of the sulphite method, as perfected by the brothers Mitscherlich, has been so obvious that the product of 1892 included only 12,500 tons of soda pulp, the remaining 137,500 tons being produced by the sulphite process. The exports of wood pulp and cellulose to the United States from southern and western Germany during the past year were valued at $583,053, of which $10,292 came from the district of Kehl, $12,399 from Mainz, $495,592 from Mannheim, $16,669 from Munich, and $48,073 from the consular district of Frankfort.

The inception of the Mitscherlich sulphite process dates from about 1871, and is an improvement on the Tilghman system, which was patented in England in 1866.

For a number of years the Mitscherlitch brothers maintained their German patents and received royalties on all pulp manufactured in this country by their methods, so that the price was maintained at about $10 per 100 kilograms (220 pounds). But, after a long and determined litigation, the German courts set aside the Mitscherlich claims, and from that time the number of factories increased to 63, of which 21 export part or all of their product, 21 sell only to German consumers, and 21 consume their own pulp in the manufacture of paper and cellulose articles. This abolition of the inventors' royalties and the consequent increased number of factories so sharpened competition that the price of air-dried chemical pulp has declined to about $5.25 per 100 kilograms, and, if the statement of manufacturers may be credited, there is now comparatively little profit in the business. Consumers have become very fastidious and exacting in respect to quality, only the whitest and purest grades having now any chance in the competition for export to France or England. The scarcity of water power compels the use of steam power by most of the factories, and the important advance which has occurred in the cost of German coal since 1888 has borne heavily on the pulp makers, handicapped as they already were by costly wood, labor, and freights.

But the steadily increasing consumption of paper and paper goods, particularly in the United States, must in the end transfer a large portion of the pulp industry to our own country; and, in view of the frequent inquiries which have been received at this office during the past year for technical information on the German methods of cellulose manufacture, a succinct account of the Mitscherlich process is herewith submitted.

The underlying principle upon which this process is based is the fact, well known in chemistry, that the resinous matrix or incrusting material which surrounds and holds together the individual fibers of wood is soluble and produces a chemical reaction with certain aqueous solutions of bisulphites, notably that of the bisulphite of lime. The problem was to apply the bisulphite under conditions which would completely and quickly eliminate the incrusting substance without unnecessarily weakening the fiber, and for this purpose it was found best to apply the solution at a high but carefully governed temperature and under a mechanical pressure that would force the chemical solution into every pore of the woody structure and enable the loosened and dissolved matrix to be removed by washing with water. The more intense the heat and the stronger the chemical solution employed the greater the injury to the fiber, and in perfecting his method Dr. Mitscherlich was careful to ascertain the exact minimum degree of both heat and pressure that would best promote the desired result. His process is, in its integrity, somewhat slower than other modifications of the sulphite system, but each manufacturer regulates these conditions to fit the nature of the wood employed, the quality of product desired, and the relative capacities of boiling and finishing apparatus. The Mitscherlich process, as practiced at Okriftel, Aschaffenburg, and other points in the district of Frankfort, may be described as follows:

The wood used is pine, mainly of the variety known in Germany as "Tannenholz," which grows straight and slender in the densely planted forests, the supply for this region coming from the Black Forest and the Odenwald. The trees, when cut in the latter forest, are from 8 to 12 inches in diameter and have few or no branches except near the top. They are carefully selected, felled, and cut into lengths of about 8 feet, the bark shaved off, and knots and other blemishes removed by hewing or boring. The selection and preparation of the timber for pulp making is a most important part of the business, the workmen assigned to that duty being among the most intelligent and liberally paid of all occupied in the manufacture. Experienced German pulp makers ascribe much of the difficulty encountered by their American competitors in making high-grade cellulose to the lack of sufficient men in the United States who are capable of properly selecting and preparing the wood.

Thus prepared, the sticks are brought to the factory and passed one by one through a machine armed with a powerful revolving knife, which at each revolution slices obliquely through the log, cutting off a chip about 3 inches in length, which is split by impact of the knife into shreds varying from mere splinters to 2 or 3 inches in thickness. From the cutting machine the chips are carried to the boilers, which in the Mitscherlich process are made large enough to contain not less than 10 tons of wood. Such a boiler is from 30 to 40 feet in length and 12 to 14 feet in diameter, and is set either vertically or horizontally in strong masonry. The boiler is pierced with manholes for introducing and removing the wood, and is rigged with a system of branching pipes, controlled by valves and leading to the steam generator, the water reservoir, and the tanks where the chemical solution is stored after preparation by one of two processes which will be hereinafter described. Gauges and cocks are also provided to enable the attendant to read and regulate the pressure in the boiler and to draw off samples of the liquid contents, from which the progress of the operation can be accurately observed.

The treatment of the wood in the boiler includes two stages or operations—digesting and boiling—the first being performed with live steam and spent bisulphite solution, the second with fresh bisulphite and steam heat applied through coils of hardened lead pipe laid round the lower portion of the interior to about one-third the height of the boiler, the proportion being about 50 square feet of heating surface to each 1,000 cubic feet of its capacity. As sulphurous acids attack iron and steel with great avidity, it was found necessary to make these steam coils of lead and to protect the interior of the boiler with a lining of acid-resisting material. For the latter purpose lead was likewise at first used; but Dr. Mitscherlich made an important improvement in the substitution of hard, glazed earthernware tiles or bricks, firmly laid against a backing of sheet lead closely packed between the tiles and the steel shell of the boiler. These lining bricks are made with edges tongued and grooved, and the lining, when properly made, lasts a long time and thoroughly protects the shell, the point of greatest danger being the edges of the upper manholes, which are exposed to the action of sulphurous gases, rather than liquid solutions.

The boiler having been filled with wood and the manholes securely closed, steam is turned in from the generator, and at the same time there is introduced through a pipe at the bottom waste or spent solution of bisulphite of lime. As the pressure increases the steam penetrates the pores of the wood, expelling the air and opening the way for the chemical solution, which gradually rises, submerging and penetrating the wood and replacing the steam, attacking in proportion to the strength of the lye the resinous matter in which the fiber is imbedded. This steaming and softening process, technically called "digesting," occupies from eight to ten hours. When it is finished the steam is shut off, the lye withdrawn, and the fresh solution of strong bisulphite of lime turned in. This cold injection condenses the steam, producing a vacuum, which sucks the solution upward without the aid of pumping until the requisite quantity has been injected. The valve is then closed and steam turned into the coils, and the second operation—"boiling"—begins. This commences gradually as the temperature rises and continues from eighteen to twenty hours. This gradual raising of the temperature by the heat of the steam coils is a very important part of the process and is conducted with great care. At about 158° F. the chemical action of the bisulphite upon the resinous incrusting matter begins. At 212° steam begins to generate, and the pressure forces the liquid sulphite into the innermost pores of the wood. If the heating has been properly regulated, the pressure at the end of thirty-six hours will have risen to from 45 to 50 pounds to the square inch, and this is regarded the proper limit. If the pressure shows a tendency to exceed this, the heat is shut off and a valve opened which permits the sulphurous gases to escape into the sulphite tank, where they are condensed and the chemical principle saved. During the whole boiling process samples of the liquid are withdrawn from the boiler and tested, so that the attendant keeps exact trace of the progress of the chemical action going on within. These tests are made by mixing in a test tube a known quantity of the bisulphite liquid with a certain proportion of ammonia and noting the quantity of normal sulphite of lime that is precipitated.

The exact nature of the chemical reaction which takes place between the bisulphite and the increasing elements of the wood is highly interesting from a scientific standpoint, but is too technical and withal too vaguely determined to come properly within the scope of this report. When the boiling is finished, the valve leading to the sulphite tank is opened and the gases withdrawn and condensed therein until the pressure is reduced to nearly the atmospheric limit, when the waste sulphite or "lye" is drawn off from the bottom of the boiler, to be used in the digesting stage of the next charge. The manholes are then opened and a flood of water poured in, which washes the softened, pulpy wood out into receiving tanks, where it is washed and stirred in fresh water until the free sulphite is eliminated.

Thence it is passed in a stream of water under a gang of stamps, similar to a quartz stamp mill, which macerates it to a coarse white pulp, and passes on through a series of rotary mixers, and, in the manufacture of cellulose, is run out in an endless web, like ordinary paper. This is about the thickness of medium pasteboard, and is either cut into sheets or wound into rolls of about 50 kilograms in weight for packing. When exported as pulp, it is air dried and packed in bales of about 200 pounds in weight.

At every stage of the process after the softened wood comes from the boiler, the utmost care is taken to purify it from every blemish and impurity. Small specks and fragments of knots are picked out of the pulp as it flows through the various machines. A keen-eyed operative stands where the cellulose web is reeled out from between the final pair of steam-heated rollers and with a sharp knife deftly stabs and removes each passing blemish, and in the packing room each sheet and roll is carefully examined inch by inch and the tiniest speck that would mar the whiteness and purity of the material is eliminated. In one factory at Aschaffenburg forty workmen are thus employed, besides forty more who examine and prepare the wood before it enters the mill. It is this extraordinary care in inspecting the raw material and finished product which gives to the German cellulose its superiority and enables it to hold its place in foreign markets in competition with the cheaper qualities of local manufacture. It is said to be the lack of sufficient skilled operatives and the high wages that such labor commands in the United States that have hitherto constituted the principal advantages of the German pulp makers in maintaining their American trade against home competition. Another point in their favor is the fact that American pine is more resinous than the German, and not only requires longer treatment, but loses more of its substance, while producing less fiber from a given amount of wood.

It remains to speak briefly of the most important of the auxiliary processes involved—that of preparing the liquid bisulphite of lime, which is the principal agent used in the digesting and boiling operations above described. For this there are several methods, the two principal of which are (1) the passing of sulphurous acid gases, obtained by burning crude sulphur or pyrites in open-air kilns, through a weak milk of lime, and (2) by exposing wet limestone or dolomite (a native double carbonate of lime and magnesia) to the action of sulphurous acid gases. The latter method was perfected by Dr. Mitscherlich, who ranged the lumps of limestone and dolomite on racks in tall, wooden towers, through which the gases are made to rise as in a chimney, while the sulphite solution is washed down by water introduced at the top and slowly dripping down over the stone during the action of the gases.

The milk-of-lime method requires even simpler apparatus, and, being therefore less expensive and equally satisfactory, is generally used. As crude sulphur is not found in Germany, pyrites, which are abundant in the country, are usually employed, and for that purpose are roasted in kilns similar to those used in the manufacture of sulphuric acid, the gases being purified from dust and cooled by passing through long brick flues and cold iron pipes before coming in contact with the milk of lime.

There is no secret or mystery about any part of the process; but care, experience, and good management are required at every step to secure satisfactory results and enable a manufacturer in these days of keen competition and close profits to maintain his trade. So confident are the Germans of their ability to do this that, notwithstanding the increased cost of labor and materials and the low import duty which enables Austrian pulp to be sold at a profit in Germany, the number of factories is still increasing, and a large establishment at Aschaffenburg is now erecting new works which will double its present capacity. The frequency of cholera and other epidemics which increase the cost and trouble of making paper from old rags, added to the steadily increasing consumption of paper in all civilized countries, which requires to be met with some new and innocuous material, opens, it is believed, a secure future for the production of wood pulp, in which the American manufacturers, notwithstanding their present alleged disadvantages in point of material and skilled labor, will assuredly play an important rôle.

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort, February 23, 1893.

PULP TRADE OF GERMANY IN 1899.

A friend of mine who is engaged in the manufacture of paper in Wisconsin wrote me recently as follows:

> Since you left this country, the business in the United States has assumed an entirely different aspect from that which you witnessed during the last five years of your residence here. We now find it difficult to buy raw material, whereas our former difficulty was in selling our manufactured goods.
>
> I am particularly desirous of examining into the situation relative to bleached sulphite made in Germany, with the possible hope of being able to obtain therefrom a portion of our supply, and, by dealing direct with the manufacturers, making it to our advantage to import at least a fair proportion of such sulphite as we may use.
>
> It occurs to me to ask you to give me, if possible, a list of the reliable large manufacturers of bleached sulphite in Germany.

From inquiries made, I have ascertained that the makers of mechanical wood pulp in Germany were fully occupied during 1899, but that profits were unsatisfactory. Prices of chemical pulp were well maintained. In pulp boards a scarcity was experienced, but nevertheless the manufacturers found it impossible to increase prices.

They complain that the cost of manufacturing had been increased, with no adequate advance in the price of their manufactured goods.

They found it impossible to compete in paper for printing and news papers with the Scandinavian and American manufacturers, who work under more favorable conditions, on account of cheap wood and ample water power.

The following is a list of some of the largest manufacturers of bleached sulphite pulp:

Actiengesellschaft für Maschinenpapier und Zellstoff Fabrikation, Aschaffenburg-on-the-Main, Bavaria.

Zellstoff-Fabrik Waldhof, Waldhof bei Mannheim.

Zellstoff-Fabrik Wolfach, Wolfach in Baden.

Zellstoff-Fabrik Ph. Offenheimer, Okriftel bei Frankfort-on-the-Main.

Simonius Zellstoff-Fabrik, Kehlheim, Bayern.

RICHARD GUENTHER,
FRANKFORT, *January 25, 1900.* *Consul-General.*

ANNABERG.

Wood pulp is not manufactured here, but is used in the manufacture of paper, cardboard, and paper boxes.

The manufacture of kitchen utensils, such as plates, pails, etc., was attempted, but was not a success. It is probable that the use of wood pulp in the manufacture of ornamental parts of chairs and other light furniture has had good results, but certainly not in this consular district.

There are two kinds of wood pulp manufactured and known in the commercial world in Germany—mechanical wood pulp and chemical wood pulp, or cellulose. Cellulose is considered much superior in every respect to the ordinary wood pulp.

Fir wood is generally used in the manufacture of wood pulp. Pine wood is also used to some extent, but it is too resinous for the manufacture of the best quality. Both kinds of wood pulp, when bleached and purified, are used successfully in the manufacture of all sorts of paper and cardboard.

The price for mechanical wood pulp (Holzschliff) ranges from 11 to 12 marks ($2.61 to $2.85) per 100 kilograms (220.46 pounds). The price of chemical wood pulp (cellulose) is about 100 per cent higher.

To produce a good mechanical wood pulp, it is absolutely necessary to use pure spring water, free from iron or other mineral products, as particles of these readily amalgamate with the pulp and, however small, result in great detriment to the paper.

There are several small wood-pulp-manufacturing establishments in this part of Germany, but their products are principally taken by the paper and paper-box manufacturers of this country.

JNO. F. WINTER,
Consul.

ANNABERG, *December 3, 1898.*

BARMEN.

The numerous inquiries instituted by me as to the uses of wood pulp here have failed to give satisfactory information. All I have been able to learn is that wood pulp is employed to a considerable extent in the manufacture of carpet lining, towels, etc. A stock company—Claviez & Co.—with a factory in Plagwitz-Leipzig and Adorf, Vogtland, Saxony, uses wood pulp to a large extent in the manufacture of the above-mentioned articles.

MAX BOUCHSEIN,
Consul.

BARMEN, *October 31, 1898.*

BREMEN.

Wood pulp is not made in this consular district, nor is it used in manufactures. Even the raw material for wood pulp is not brought into this port, although Bremen is otherwise a great wood market. The wood for pulp, as far as it is foreign (in this case, Swedish), is brought chiefly to Hamburg, where it is transshipped and brought up the River Elbe for the Saxon wood-pulp mills. Saxony is the country where pulp is principally made.

I am not aware that it is used for other purposes than for the manufacture of paper and cardboard.

A year or two ago, a large stock company was organized at Cassel for the utilization of waste wood ("Holzabfallverwertung"), but I do not know the nature of this concern.

LOUIS LANGE, Jr.,
Consul.

BREMEN, *October 27, 1898.*

FREIBURG.

In answer to the circular letter of the Department calling for a report on wood pulp and its use in manufactures, I beg to say that all my efforts to locate such an industry in this consular district have met with no success, and I feel convinced that none exists here.

While away on leave of absence last fall, I spent a few days at

Memmingen, in southern Bavaria, at which place there is a wood-pulp factory. A translation of the last page of this firm's price-list circular is as follows:

> My papier-maché products, consisting of pails, etc., have a cylindrical shape and are made of any desired length or size. They are manufactured from straw pulp under great pressure. The covers and bottoms are made of the very best quality of well-seasoned wood, so that shrinkage and warping are impossible.
>
> There seems to be no doubt that this compressed straw-pulp product is far superior to any ware manufactured from wood or tin, and hence these wares have become absolutely essential to druggists, chemists, food and seed dealers, etc. Housekeepers have also found this ware to be the best in which to preserve fruits and foods, such as flour, salt, grain, rice, sugar, coffee, etc.

E. THEOPHILUS LIEFELD,
FREIBURG, *March 28, 1899.* *Consul.*

HAMBURG.

In reply to the Department's circular instruction of September 28 last, I have to state that, so far as I have been able to ascertain, there is no industry of this kind within this consular district, and therefore I have not succeeded in obtaining any satisfactory information on this subject.

HUGH PITCAIRN,
HAMBURG, *January 20, 1899.* *Consul.*

NUREMBERG.

Wood pulp (in German, "Holzstoff" or "Holzschliff") is used solely for the manufacture of paper and cardboard in the Kingdom of Bavaria. I understand that it is also used in the manufacture of pressed-wood ornaments for furniture decoration in Germany, but no such use is made in this Kingdom. A leading firm for the manufacture of such pressed-wood ornaments is said to be that of B. Harras, in Böhlen, Thuringia.

Wood (not wood pulp) is also used for the manufacture of "cellulose," or "Zellstoff." Of this, the finer grades of paper are made, and also celluloid.

The Deutsche Celluloidfabrik, in Plagwitz-Leipzig, is said to be the largest celluloid factory in Germany.

This and others supply the celluloid-ware manufacturers with the raw material, and these manufacturers, in turn, make from this material various articles—combs, brushes, toilet cases, bicycle-gear cases, etc. This has become quite an industry of late. There are now four factories of celluloid goods in this consular district, and they are all prospering. I am unable, however, to furnish any statistics, as the Kingdom of Bavaria does not issue separate returns. They are included in those of the German Empire.

GUSTAV C. E. WEBER,
NUREMBERG, *November 1, 1898.* *Consul.*

SONNEBERG.

In response to circular of September 28, 1898, asking for information as to the various uses to which wood pulp is applied in the manufactures of Europe, I have to report the following results of investigations; results not as satisfactory as I could desire, but the best possible, considering that I do not happen to be located near any of the wood-pulp centers, where I could give the subject personal examination, but had to depend upon securing material from correspondence—a very unsatisfactory method, owing to the natural hesitation of manufacturers to impart anything regarding their business to one unknown to them.

I have succeeded, however, in opening up communication with some of the leading German manufacturers, and find that there are extensive interests engaged in the manufacture of wood pulp in the country, as well as in Austria, Scandinavia, Finland, and Russia. The pulp is being used with considerable success in the manufacture of divers styles of articles—furniture, imitation leather goods, water vessels, paneling and interior house decorations, picture frames, lint for bandages, gunpowder, etc.

Wood pulp can be made by two processes—one known as the "mechanical," by which the raw spruce wood is reduced to a mass by machinery; by the other, the "chemical," the wood is boiled under pressure with acids and alkalies. The fibers are thus freed from surrounding matters, and the mass or pulp is naturally of finer quality. The latter produces cellulose, which can be regarded as a complete substitute for the best linen and cotton rags in the manufacture of the finer grades of paper.

One advantage some of the European manufacturers of cellulose claim over the Americans is that they are not dependent upon uncultivated coniferous plants, the cellular structure of which, they claim, varies to an extraordinary extent, making it impossible to get the best results when the cellulose is manufactured into the finer grades of paper, such as that used for legal and copper-plate printing. Many of them, they say, control forests of regularly grown spruce (the only wood that can be employed with the best results), cultivated for several decades on scientific principles. Whether this is true to the extent claimed or not, I have not been able to verify; but I do know that the forests are cultivated upon well-defined principles all over Germany, this being a business in itself.

The way of treating the spruce for manufacturing cellulose is as follows:

The wood, after the bark and branches have been removed, is cut into small pieces and subjected to treatment with a sulphite liquor under pressure in large iron digesters. The adherent liquor, which contains all the incrusting matters in solution, is then washed out and the cleansed fibers mashed in beating engines to insure complete purification. The resulting mass, cellulose, is packed or pressed into the most suitable form for transportation. For the fine qualities of paper, the cellulose is bleached, and when lint or gunpowder is to be made it is prepared chemically pure and free from gummy matters. Cheap wrapping paper is made from the knots and waste wood, the latter often being made by the same mill.

Probably, the largest manufacturers of this cellulose in the world are located at Waldhof bei Mannheim, Germany—the "Zellstofffabrik." Their sulphite mill has an output of 140 tons of dry pulp daily, and after the completion of another factory, now being built in Russia, this company will have a total output of 200 tons of dry pulp daily. In answer to my question as to exports to the United States, they say:

> In former years, we sent a good deal of our pulp to the United States, but in the last two years the exportation to your country has fallen off heavily. Now, we export very little pulp to the United States, and only the finer qualities, these not being made there.

Another large cellulose-manufacturing concern is that of Richard Wolf, Schwarzu, on Saalebahn.

Two prominent manufacturers of wood-pulp articles are Gebrueder Adt, Forbach, Lorraine, and Com. Rath. Harras, Boehlen, Thuringia.

VERNE E. JOY,
Consular Agent.

SONNEBURG, *November 22, 1898.*

STUTTGART.

There are only three factories of wood pulp in this consular district, viz:

(1) The Papier und Zellstoff Fabriken (joint-stock company), in Unterkochen.

(2) The Simonius'sche Cellulose Fabriken, in Wangen, Allgau.

(3) The Papier, Cellulose und Holzstoff Fabrik, in Baienfurt.

The first informs me that what is known in America as chemically prepared wood pulp is called in Germany "cellulose," and mechanically ground wood is known as "Holzschliff;" that besides its use in the manufacture of paper, mechanical wood pulp is employed for articles of papier-maché. Wood pulp, or pressed papier-maché, is also used for imitations of wood carvings.

Cellulose is sometimes used for filtering purposes—to filter beer, etc.—also for surgical purposes, such as bandage, wadding, etc. The second company states that it manufactures only cellulose and sulphite, but no mechanical wood pulp, and that its product is exclusively used for the manufacture of paper of all sorts—packing, printing, and writing paper, including the finest qualities; also parchment, tissue, and grease-proof paper, used for wrapping butter, cheese, etc. That wood pulp is used in the manufacture of chairs and furniture the managers have never heard, but they understand that cellulose is used in making silk.

EDWARD H. OZMUN,
STUTTGART, *October 22, 1898.* *Consul.*

NETHERLANDS.

AMSTERDAM.

I am informed that wood pulp is principally imported into this country from Norway and Sweden. I can not ascertain the exact amount of the imports, as the article is classified at the custom-house here under the heading "rags."

In this country, wood pulp is used only in the manufacture of paper for printing newspapers. It is offered here from Norway and Sweden at 23 to 25 florins ($9.25 to $10.05) per ton of 1,000 kilograms (2,204.6 pounds) in lots of 8,000 to 10,000 tons c. i. f.

GEORGE COREY,
AMSTERDAM, *October 28, 1898.* *Consul.*

ROTTERDAM.

Wood pulp, mostly made of willow wood, is produced by only one manufacturer in the Netherlands, and is imported from England, Germany, Sweden, and Norway. No statistics exist showing quantity imported, and an estimate can not be obtained. The manufacturer has not, in answer to my request, communicated to me the quantity manufactured nor the process of manufacture. The article is, in the Netherlands, used only in the manufacture of paper. Messrs. Van Gelder Brothers, paper manufacturers of Amsterdam, said to be the principal consumers of wood pulp, state that from

12,000 to 13,000 tons are used annually for that purpose. The price of the article in the Netherlands is £2 (about $9.73) per ton, 50 per cent allowed for moisture; costs, insurance, and freights paid.

S. LISTOE,
Consul.

ROTTERDAM, *May 1, 1899.*

RUSSIA.

ST. PETERSBURG.

In reply to Department circular of September 28, relative to wood pulp and its uses, I have to state that wood pulp is used within this consular district only for the manufacture of paper. The market price is between 1.20 and 1.10 rubles per pood (62 to 57 cents per 36 pounds).

The rate of freight for wood pulp from New York to St. Petersburg, below bridges, is 20s. ($4.86) per 40 cubic feet, plus 5 per cent primage.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, *November 8, 1898.*

FINLAND.

Wood pulp is made in Finland of pine wood, and there are a number of large factories which use water as motive power. The oldest are situated on the Kymmene River. Wood pulp is used here only for making paper cartons and in the bookbinding trade. It is exported in sheets.

I give below a list which contains the names, addresses, and yearly production of the most prominent wood-pulp factories in Finland:

Ummeljoki Träsliperi; established 1881; yearly production, 171,500 marks ($33,100); address, Anjala, Finland.

Nokia Aktiebolag; established 1869; yearly production, 1,370,000 marks ($264,410); address, Nokia, Finland.

Enso Träsliperi Aktiebolag; established 1888; yearly production, 716,000 marks ($138,188); address, Yääski, Finland.

Mänttä Träsliperi; established 1868; yearly production, 1,200,000 marks ($231,600); address, Mänttä, Finland.

Karhula Träsliperi; established 1889; yearly production, 850,000 marks ($164,050); address, Karhula, Finland.

Wattola Träsliperi; established 1893; yearly production, 167,000 marks ($32,231); address, Pyhäjäroi, Finland.

Ingerois Träsliperi; established 1872; yearly production, 1,200,000 marks ($231,600); address, Sippola, Finland.

Myllykoski Träsliperi; established 1894; yearly production, 262,000 marks ($50,566); address, Sippola, Finland.

Walkiakoski Träsliperi; established 1872; yearly production, 2,575,000 marks ($496,975); address, Lempäälä, Finland.

Tammerfoss Linne Feenupuhtur.

Aktiebolags Träsliperi; established 1873; yearly production, 266,000 marks ($51,338); address, Tammerfoss, Finland.

Kuusankoski Aktiebolag; established 1872; yearly production, 1,500,000 marks ($289,500); address, Abo, Finland.

Kymmene Aktiebolag; established 1872; yearly production, 1,900,000 marks ($366,900); address, Abo, Finland.

VICTOR FORSELIUS,
Consular Agent.

ABO, *November 4, 1898.*

SWEDEN AND NORWAY.

STOCKHOLM.

The manufacture of wood pulp in these Kingdoms seems to be carried on merely to supply the export trade. Only a small quantity of the prepared article is consumed in the country; in fact, the amount is so small that we may say the whole production is taken abroad.

The wood pulp made is what the trade calls chemical, mechanical pulp, and sulphite. The pulp is sold in England, France, and Germany, the countries being named in the order of their importance as markets.

As far as I have been able to ascertain, the pulp so exported is used almost entirely to make paper. I give below a few statistics, which show the amount of paper made in Sweden:

Year.	Total wood-pulp production.	Value of paper and pasteboard.		Total export of wood pulp.
		Imported.	Exported.	
				Tons.
1872				5,800
1882				9,250
1885				15,800
1886				25,150
1890				64,400
1891				86,350
1892	$2,881,419			88,730
1893	3,334,604			97,550
1894	3,998,252	$756,778	$1,761,351	101,730
1895	4,190,786	759,870	1,823,796	149,410
1896	5,018,034	776,511	2,027,777	183,400

EDWARD D. WINSLOW,
Consul-General.

STOCKHOLM, *December 17, 1898.*

GOTHENBURG.

Among manufactures of wood produced in Sweden, I notice the following articles: Pit props, railroad ties, unfinished oars; deals, battens, and boards; wooden moldings, laths, and lath wood; joinery, including furniture; matches and splints, "excelsior," walking canes, tobacco pipes, Persian blinds; lasts, clogs, and wooden shoes; shingles; wooden boxes; staves, barrels, and firkins; and, in a more advanced stage of manufacture, wood pulp, pasteboard, and paper.

The above articles are all in this line that are mentioned in the official statistics, and information about other articles manufactured from wood or wood pulp can not be obtained from this source. As merchants and manufacturers here are careful not to furnish any information about their business, it is difficult to obtain any reliable information about new methods used and the products thereof. It may be said with some certainty, however, that wood pulp is not extensively used in Sweden for other purposes than in the manufacture of pasteboard and paper. To some extent, wood pulp mixed with plaster of paris is used in the manufacture of moldings and other ornaments for ceilings. Katrinedals Pappersbruk, in the province of Bohuslän, and Alstermo Bruk, in the province of Småland, make artificial leather or "leather pasteboard," a component part of which is understood to be wood pulp. The method of manufacture is said to have originated in the United States. A factory near Forserum, in the county of Jönköping, has recently started the manufacture of "compo-boards," which are made by pressing a special kind of pasteboard outside of wooden strips, and are principally used for inside work in buildings. It is supposed to be noncombustible and capable of excluding dampness and noise.

As to the manufacture of wood pulp and the purposes for which it can be used, I take the liberty to quote the following from Illustreradt Varulexikon:

> Wood pulp, or wood cellulose, which has gained such great importance in the modern manufacture of paper, is chiefly divided into two kinds—mechanical and chemical.
>
> The former is manufactured by grinding wood, parallel with the fibers, against quickly rotating rollers of sandstone under a steady flow of water, assorting it by a system of sieves, and drying it. Such pulp alone does not yield good paper, because the fibers are too short and do not felter together very well, and the resin left in the pulp prevents subsequent bleaching. It is therefore generally mixed with 20 to 40 per cent of other paper stock. In middling fine writing paper, printing paper, or wrapping paper, the admixture may amount to 50 per cent, and in ordinary printing or writing paper to 60 to 70 per cent.

The wood pulp produced by the chemical process yields better results. In this process, the wood is first split into chips or planed into shavings, which under heavy pressure are boiled in solutions which dissolve the incrustating component parts of the wood. The first chemical used on a large scale for this purpose was caustic soda, but others have been used, such as sulphurous acid, sulphurous magnesia, sulphurous lime, with some hydrochloric acid, etc. In the sulphate method, sulphate of soda (glauber salt) is used together with caustic lime for the preparation of caustic alkali lye. In the manufacture of soda or sulphate cellulose, the lye left after the boiling process contains all the incrustating parts of the wood used, and, in order to regenerate the alkali salts, the lye is evaporated and the residue is heated red hot or melted. The heated or melted mass is then soaked in water and is boiled, in order to transform the carbonate of soda into soda hydrate with burned lime—that is, to make it caustic. The loss of alkali is made up for by addition of soda or sulphate of soda (glauber salt). The latter is generally used neutral; but by treating the cheap, sour sulphate of soda, which is obtained as a by-product in the manufacture of nitric acid, with the carbonate of lime obtained by the abovementioned regenerating process, or by adding it to the lye not made caustic, such sour sulphate of soda can also be used.

The sulphite method has an advantage over the alkali method in this, that the former yields at least 10 per cent more pulp, and the pulp produced can also without special bleaching be used for ordinary printing paper and possesses great compactness. The sulphite pulp has been compared to the hard, smooth, and nonelastic flax fiber, while the alkali pulp reminds one more of the soft and elastic cotton fiber, which is so susceptible of coloring. While the alkali pulp is thus suitable for colored paper, the sulphite pulp is better adapted for writing and printing paper.

An important question in determining the value of wood pulp is the moisture. Wood pulp is often sold containing 50 to 60 per cent of moisture, and in many places the custom is to base the price on 50 per cent air-dried pulp. The amount of moisture in air-dried pulp is considered to vary between 10 to 12 per cent, according to the agreement between seller and purchaser; but this often gives cause to controversy, and it would be better to base the price on absolutely dry pulp.

By an extensive series of experiments, it has been learned that absolutely dry chemical pulp absorbs less than 10 per cent moisture from the atmosphere, while mechanical pulp can absorb 11.58 per cent. The Norwegian and Swedish Cellulose Pulp Association has fixed 12 per cent as the limit of the allowable moisture of air-dried pulp; that is, 100 kilograms of air-dried cellulose should contain 88 kilograms of absolutely dry pulp and 12 kilograms of water.

The most important raw material for wood pulp in Sweden is spruce, but aspen and pine have also been used to a smaller extent.

From wood pulp are manufactured household goods, such as pails, tubs, and kitchen utensils; doors, furniture, bodies of carriages, ornaments for ceilings, picture frames and moldings, artificial leather, cordage, textile fabrics, and nitric gunpowder. Felt for use as surgical bandages is also manufactured from chemical pulp, which is made antiseptic by saturating the felt in different solutions, such as corrosive sublimate, boracic acid, etc.

It has recently been stated than an imitation of silk fiber is made from wood pulp. By proper treatment the pulp is dissolved and by a special apparatus pressed through very fine glass tubes, water being used to make the threads retain their shape after having been formed by said apparatus.

The most common method of manufacturing the chemical pulp at the present time in Sweden is the calcium-sulphite method. Some factories are using the soda-sulphate method.

The following tables show the value of the wood pulp, pasteboard, and paper manufactured in Sweden during the five years 1892–1896, according to the official Bidragtill Sveriges Officiela Statistik; also the growth of the export of wood pulp. During the time covered by the table of export, the price of wood pulp has decreased considerably, wherefore the value of the export does not show such an increase as the quantity.

Wood-pulp mills.

Year.	Mills.	Wood pulp produced.				Total value.
		Chemical.		Mechanical.		
		Dry.	Moist.	Dry.	Moist.	
	Number.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	
1892	89	7,347	44,874	27,799	34,962	$2,881,419
1893	93	47,063	11,257	39,458	40,363	3,334,604
1894	105	65,575	3,021	49,535	59,484	3,998,252
1895	110	88,401	2,536	55,148	65,950	4,190,786
1896	128	103,945	6,245	72,532	80,763	5,018,034

Paper mills.

Year.	Mills.	Production.		Total value.
		Paper.	Pasteboard.	
	Number.	*Tons.*	*Tons.*	
1892	53	34,762	6,342	$2,981,493
1893	59	38,391	4,967	3,011,076
1894	57	44,599	5,792	3,392,425
1895	55	49,384	5,911	3,577,596
1896	50	53,103	10,834	3,813,608

Sweden exports large quantities of wood pulp, principally to England, Germany, United States, and Finland, but the export to the United States seems to be on the decline.

The industrial directory of Sweden contains about 120 names of wood-pulp mills in Sweden.

A few are mentioned below.

Names of wood-pulp mills or owners.

Axelfors Trämassefabrik, Svenljunga, Sweden; managing director, Oskar Nylander.

Billeruds Trämassefabrik, Seffle, Sweden; manager, G. Th. Lindstedt.

Björkå Trämassefabrik, Björkå Bruk, Sweden; manager, N. C. Falck.

Aktiebolaget Lisefors Bruk, Tösse, Sweden; manager, Wendel Bäärnhielm.

Hannebols Trämassefabrik, Tösse, Sweden; manager, C. Nyberg.

Eds Cellulosafabriks Aktiebolag, Ankarsrum, Sweden.

Edsvalla Trämassefabrik, Edsvalla, Sweden; manager, E. Hollender.

Forsbacka Pappersmassefabrik, Amål, Sweden; managers, P. R. and F. R. Tottie.

Forsviks Trämassefabrik, Forsvik, Sweden.

Frånö Cellulosafabrik, Frånö, Sweden; production, 6,000 tons per annum; manager, Sören W. Mörck.

Hellefors Trämassefabrik (Messrs. F. Lundvall & Co.); address, Helleforsnäs, Sweden.

Munkedals Aktiebolag, Munkedal, Sweden.

Nissaströms Trämassefabrik, Johansfors, Sweden; manager, S. E. Sandström.

Mölnbacka Trämassefabrik, Mölnbacka, Sweden; manager, G. von Proschvitz.

Tidafors Sulfitaktiebolag, Uddevalla, Sweden; managing director, Ad. P. Zackau.

Håfveruds Trämassefabrik, Upperud, Sweden; manager, O. Lönning.

Upperuds Träsliperi, Upperud, Sweden; manager, Ax. R. Janson.

Vargöns Aktiebolag, Venersborg, Sweden.

Vermbols Trämassefabrik, Katrineholm, Sweden; manager, Count Maur. Lewenhaupt.

Ätrafors Trämassefabrik, Ätrafors, Sweden; manager, J. M. Hanson.

Pasteboard or cardboard factories.

Forssâ Träpappfabrik, Näsviken, Sweden.

Motala Pappersbruk, Motala, Sweden.

The paper mills are about 50, some of which are combined with the wood-pulp mills mentioned above.

The "compo-boards" deserve a few closing words. It seems that this kind of board can be used for many purposes where tightness combined with strength and little weight is desired. It is stated that the boards can with advantage be employed in the manufacture of trunks, packing cases, doors, furniture (such as tops of tables, bottoms of drawers, backing for mirrors), and all kinds of sign boards. They can be veneered in the usual manner. They are also used for covering ceilings, walls, floors, etc.

ROBERT S. S. BERGH,
Consul.

GOTHENBURG, *November 7, 1898.*

CHRISTIANIA.

While Norway annually produces large quantities of wood pulp, the article itself is used only in a limited degree in manufacture, except in paper and pasteboard. To some extent, it is used in making picture frames and a few fancy articles; but the industry is so little developed that a closer investigation of the methods here used would be of no practical value. A factory where the pulp was compressed and made into pails, tubs, and other hollow ware was started near Christiania a couple of years ago, but the enterprise did not pay, and the undertaking was consequently abandoned.

I shall have to limit my report to a statement of the manner in which the article is produced.

The manufacture of wood pulp in Norway is of comparatively recent growth, but its development has been quite unique in rapidity. It has become one of the country's most important export industries. Owing to its extensive forests and great water power, Norway is peculiarly well adapted for this industry. The wood fiber is prepared either mechanically or chemically. The mechanical pulp is produced by grinding logs against great grindstones made of sandstone, with a liberal supply of water. The chemical pulp is produced by cutting the wood into quite small pieces, which are boiled in large caldrons together with different chemical substances, by which means the resin contained in the wood is discharged. Afterwards, the pulp is set free from these chemical substances by passing through a washing process. The chemical substances used for the boiling are either sulphuric salts, by which sulphite cellulose is obtained, or compounds of soda, such as hydrate of soda, carbonate of soda, etc., by which sulphate cellulose is obtained. In Norway, the sulphite cellulose is mostly produced.

At the end of 1890, the following establishments were in operation: Eleven cellulose factories, with 1,516 men employed; 2 factories combining cellulose with paper and pasteboard works, with 317 men employed; 47 wood-pulp factories, with 2,045 men employed; and 4 factories of wood pulp combined with paper and pasteboard works, with 736 workmen. These numbers are given in the Statistical Yearbook for Norway for the year 1897, which gives the last official information on the subject obtainable. The number of manufactories is now, however, much greater. While the exports in 1870 amounted to only $21,600, they have during the last five years been as follows:

Year.	Quantity.	Value.
	Tons.	
1893	219,007	$3,922,700
1894	238,860	3,831,600
1895	246,225	3,640,500
1896	284,191	4,157,000
1897	302,359	4,876,000

It may be of interest to learn what countries are buying the Norwegian wood pulp, and this information is given in the following statement, covering the exports in 1897:

Country.	Value.	Country.	Value.
Sweden	$7,600	Portugal	$3,000
Denmark	166,900	Spain	194,700
Russia	71,000	Italy	1,650
Germany	53,700	United States	16,100
Netherlands	76,100	Argentina	500
Belgium	307,050	Total	4,876,800
Great Britain	3,358,800		
France	619,700		

The above figures are taken from the official publication Norges Handel for the year 1897. It will be observed that the export to the United States is set down at $16,100, but, as the certified invoices at this consulate alone give a total of $60,165.06, there is evidently a mistake or a misprint.

The producers of wood pulp in this country are anxiously watching the progress of the industry in the United States. Last spring, they caused the consul of Sweden and Norway at New York to examine into the conditions under which the article is manufactured in America. He furnished a list showing location and capacity of all the principal plants and other information, and expressed the opinion that America would soon become a competitor in the European markets, as the country had many advantages, one being an abundance of hemlock and other cheap woods accessible to the seaports in the Eastern States.

HENRY BORDEWICH,
Consul.

CHRISTIANIA, *October 22, 1898.*

BERGEN.

The only wood-pulp factory in this consular district (Tromsö to Christiansand) is located at Ranheim, near Drontheim, and is known as Aktieselskabet Ranhiems Cellulosefabrik. The factory has been established a few years, and is controlled by English capitalists.

They employ a working force of 250, and the annual output is about 4,000 tons of wood pulp. There is an abundance of spruce in the neighborhood, as Ranheim is situated in a very thickly wooded part of the country.

About 2,200 tons of this wood pulp is exported, 1,527⅝ tons, valued at $51,990, having been sent to the United States during 1898, and the balance to Holland, Germany, and Denmark.

VICTOR E. NELSON,
BERGEN, *January 26, 1899.* *Consul.*

SWITZERLAND.

BASEL.

Wood pulp is used in Switzerland exclusively in the manufacture of the cheaper kinds of paper and pasteboard. Accordingly, this industry has no relation to the most important question asked by the circular of the Department of State. But, as a matter of secondary interest, the following information in regard to the wood-pulp factories of the country and their methods is communicated.

The wood most generally used is the aspen. Spruce and fir are also employed, the former after having been steamed.

The product is generally of excellent quality—fine, clear, and white—a result which is ascribed to the abundance of pure spring water and to the fine sandstone with which the grinding is effected.

Two systems of grinding are in use, viz, the Voelter system, with vertical stones and generally five mechanical presses for holding the wood against the grinding apparatus, and the Siebrecht system, with horizontal stones and eight hydraulic presses. The so-called "Huess process" of grinding with a small quantity of water—as employed, for instance, in Canada—has not been introduced into Switzerland.

The following is a list of all the wood-pulp and cellulose establishments in Switzerland:

Albert Ziegler & Co., Canton of Berne; manufacture pulp for use in their own paper factory.

Mill at Baetterkinden; belongs to the paper mill at Utzensdorf.

J. J. Nieder & Co., Brühl Bischoffszell; manufacture wood board or carton.

Gebrüder Vogel, Cham, Canton of Zug; white and brown pulp, solely for use in their own paper mill.

J. J. Hornberger, Dübendorf, Mill Lanquart, Canton Graubündten; pulp for use of paper mill at same place.

Perlen Mill, Canton Lucerne; pulp for own use solely.

Rondchâtel near Biel, Canton Berne; manufactures solely for the paper mill at Biberist. This is one of the best-arranged as well as newest establishments in Switzerland. It works with 300 horsepower. The horizontal grindstones rest directly on the turbine shaft, thus avoiding all special gearing. The machinery comes from the establishment of J. M. Voith, Heidenheim.

Fabrique de Pâte de Bois de la Doux, at St. Sulpice; employs 300 horsepower, grinding aspen wood exclusively.

Landerest & Co., at Marby, near Fribourg; make brown wood board.

All of the above-named establishments have been in operation for several years. No new enterprises of this kind are now undertaken, and, indeed, two factories have been abandoned within a short time.

Cellulose, the pulp produced by chemical means, is manufactured for sale by two establishments only, viz, Dr. B. Sieber, Attisholz, near Soleme, and Gebrüder Schonlan, at Kaiser Augst.

The following establishments produce only for use in their own paper mills:

Papierfabrik Cham, Canton Zug.

Papierfabrik Landquart, Canton Grisons.

Papierfabrik Perlen, near Lucerne.

In all these factories, the Mitscherlich, or sulphite, method is used. The soda, or sulphate, method of production has not been introduced into Switzerland.

From the above complete enumeration of the manufactories of wood pulp and cellulose in this country, it will be seen that the product is employed almost exclusively in the paper mills with which the pulp establishments are connected. The product sold by the manufacturers is also used for making paper. Accordingly, the report that European countries have extended the use of wood pulp to the making of furniture and to other purposes unknown in the United States has no application to Switzerland.

American manufacturers who desire full, precise, and technical information in regard to the methods and machinery employed in European countries for the manufacture of wood pulp may be interested to learn—if they are not already aware of the fact—that the standard work on the subject is Hoffman's Handbook of Paper Manufacture (Praktisches Handbuch der Papier-Fabrikation; second edition; 2 volumes; published by the Papier-Zeitung, 134 Potsdamerstrasse, Berlin). So far as I know, there is no English translation of the new edition of this magnificent work, the second volume of which contains an exhaustive historical and descriptive account of the manufacture of wood pulp, with illustrations showing the machinery and methods used down to the present time.

GEORGE GIFFORD,
Consul.

BASEL, *November 21, 1898.*

ZURICH.

In reply to Department circular, I desire to report that wood pulp is not used in this consular district except in the manufacture of paper. Furniture is not manufactured in this country on a large scale; it is mostly made by hand.

A. LIEBERKNECHT,
Consul.

ZURICH, *October 19, 1898.*

THE WOOD-PULP INDUSTRY OF CANADA.

It is only of late that the full value of the enormous forests of Canada has been realized by the growth of the new industry—the manufacture of pulp.

Ten years ago, spruce could hardly be disposed of as a gift. To-day, heavy shipments go to the United States, Great Britain, and Japan, and the demand from many European countries and from Australia and South America is growing. The industry has developed with great rapidity and is daily increasing.

The Dominion census of 1871 says nothing about pulp mills, but in 1881 and 1891 I find the following:

Year.	Number.	Capital invested.	Hands employed.	Wages.	Raw material.	Product.
1881	5	$92,000	68	$15,720	9,400	$63,000
1891	24	2,900,000	1,025	292,099	469,845	1,057,870

Great as is the indicated increase here shown, it is certain to be outstripped by the next census returns; exact returns are not to be obtained at this time. New mills are being erected, others proposed, and old ones are being enlarged and developed. An estimate has been made that the total annual output in Canada is about 170,000 tons—in the proportion of one-third sulphite and two-thirds mechanical—but this is far within the mark. What this involves can readily be seen from the statement of a leading manufacturer that the labor "from stump to car" is something like six men to each ton of pulp, wages being from $1.25 to $2 per day.

The appended tables compiled from the official returns from the countries named will show the chief sources of the pulp supply, viz, Norway and Sweden; but Canada's name is beginning to appear, and it is fully recognized in Norway and Sweden what a formidable competitor the Dominion is becoming. Last year, the Scandinavian Government caused detailed inquiries to be made in Canada as to the facilities for making pulp, cost of working, etc. A representative of the Dominion Government who went through the Scandinavian woods reports having heard on all sides that there is great anxiety regarding Canada, especially as the forests of Scandinavia are showing signs of depletion. To show the growth of the pulp industry in Sweden, I quote the following figures: The exports in 1872 were 5,786 metric tons; in 1888, 38,472 tons. Of late, there has been no such rapid increase.

The United States is the great customer for wood pulp. Table 2 shows how the Scandinavian shipments have fallen off and how Canadian pulp has increased.

The figures in this table indicate the growth of Canadian exports. In 1890, only about one-seventh of the pulp imported into the United States came from Canada; in 1898, it had risen to 100 per cent. In like manner—as seen by Table No. 5—while Great Britain took only $1,640 in 1893, in 1895 this had grown to over $250,000.

In the newly established Boletim Commercial issued by the Portuguese Government, in connection with the consular service, in the number for October, 1898, attention is called to Canada's place as a pulp producer, especially as a rival of Norway. With the inauguration of new lines of steamers to eastern Canada in connection with trans-Atlantic commerce, there seems to be every indication of the business growing to a still greater extent.

The spruce forests in the northern part of the United States are being rapidly exhausted. As previously noted, the same is true of Scandinavia. In view of the fact that Germany, Austria, and France are conserving their forests with the most rigorous laws, there appears to be no place to obtain spruce fit for this particular purpose except in Canada. True, there are immense forests in parts of European Russia and in Siberia, but difficulties of transportation and lack of enterprise prevent them from being of much account at the present time. No country can do anything in this business without immense forests. It is not always realized what it requires in the way of trees to produce, say, a newspaper. The Christmas edition of the New York World consumed over 270 tons of white paper, which required at least 230 tons of ground wood pulp and 50 tons of sulphite. This means fully 200,000 feet of spruce logs; or, to regard it in another way: The Glen Manufacturing Company, Berlin Falls, N. H., in a letter to the Boston Globe, says that it requires 1,200 acres of trees annually to keep that journal supplied, which means some 60,000 trees per annum. Le Petit Journal, Paris, is said to require 25,000 acres of timber land to be thinned out to keep up its pulp supply. At a conservative calculation, the daily press of the United States uses 40,000,000 trees, which, at 50 trees to the acre, means the thinning out, if not the clearing, of 800,000 acres per year, or 1,250 square miles. In view of the numerous other demands for pulp—viz, ware, cornices, conduits, poles, horseshoes, bricks, tiles, and a thousand other things—it is self-evident that the only countries which can have any part in the trade are those with great forests, such as Canada.

As might be supposed from its great natural forest resources and wonderful water power, the Province of Quebec has the greatest number of pulp mills. Although every endeavor has been made for over three months to obtain a complete list of the mills in Canada, I have thus far only been able to get a partial statement, as follows:

Pulp mills in Canada.

Mills.	Location.	Capacity in 24 hours.	Product.
Ontario.		*Pounds.*	
Sault Ste. Marie Pulp Company	Sault Ste. Marie	500,000	
Toronto Paper Company	Cornwall	10,000	Sulphite fiber.
J. Fisher & Son	Dundas	.....	Chemical fiber.
Sills Brothers	Frankford	2,000	
W. Barber & Bros	Georgetown	35,000	
Miller Brothers	Glen Miller	16,000	
Riordan Pulp Mills	Merriton	40,000	
Riordan Sulphite Mills	do	60,000	
Thorold Pulp Mills	Thorold	14,000	
Quebec.			
Royal Pulp Company	East Angus	16,000	
Fraserville Pulp Company	Fraserville	.....	
Canada Paper Company	do	20,000	
Laurentide Pulp Company	Grand Mere	140,000	
E. B. Eddy	Hull	40,000	Sulphite fiber.
Do	do	60,000	Pulp.
Megantic Pulp Company	Lake Megantic	20,000	
Dominion Paper Company	Maddington Mills	.....	
Kingsey Falls Pulp Company	Kingsey Falls	15,000	Chemical fiber.
Do	do	3,500	Wood pulp.
T. Gorrie	Port Neuf	3,000	
J. Ford & Co	do	.....	
F. Soucy	St. Antonin	4,800	
Jacques Cartier Pulp Company	Ste. Jeanne de Neuville.	.....	
Pont Rouge Pulp Mills	do	9,000	
J. C. Wilson & Co	St. Jerome	9,000	
Do	Lachute	.....	
Canada Paper Company	St. Raymond	18,000	
T. L. Jackson	do	.....	
St. Ursule Pulp Company	St. Ursule	6,000	

Pulp mills in Canada—Continued.

Mills.	Location.	Capacity in 24 hours.	Product.
Quebec—Continued.		*Pounds.*	
A. Buntin	Valleyfield		
Canada Paper Company	Windsor Mills	24,000	Wood pulp.
Do	do	20,000	Chemical fiber.
Sturgeon Falls Pulp Company	Sturgeon Falls	240,000	
New Brunswick.			
Dominion Pulp Company	Chatham		Sulphite fiber.
Maritime Sulphite Company	do	80,000	
Cushing Pulp Company	St. John		Do.
Nova Scotia.			
Salters Falls Mills	Mill Village	20,000	
Acadia Pulp and Paper Mills	Milton	80,000	
Acadia Pulp Company	New Germany	50,000	
H. C. Hart	Sheet Harbor	5,000	
Sissiboo Falls Pulp Company	Weymouth Bridge	24,000	
Morgan Falls Pulp Company	Morgan Falls		
British Columbia.			
British Columbia Pulp and Paper Company (succeeds Albernie Pulp and Paper Company).	Victoria		
Abandoned.			
Fenelon Falls Pulp Company	Fenelon Falls, Ontario.		
Idle.			
A. R. Dickie (succeeds Halifax Wood Fiber Company).	Sheet Harbor, Nova Scotia.	20,000	Spruce pulp.

Besides those given, an English syndicate is arranging for mills in the Saguenay and St. John country, with the chief mills at Alma Island, Grand Discharge. It is proposed to spend $2,000,000, and the minimum output is to be 450 tons.

St. John, New Brunswick, is erecting a pulp mill at Mispec, which will be operated by English capital; this will manufacture mechanical pulp.

A strong company proposes to utilize the great water power at Grand Falls, about 220 miles above St. John. A canal will be dug joining the basin of the river with the stream above the falls, which have a sheer drop of 70 feet.

The Mispec Mill has an output of 50 tons daily, and is considered one of the best equipped mills on the continent. The two mills at Chatham, New Brunswick, have an output of 50 to 60 tons per day, while the one at Grand Falls is estimated to turn out 100 tons. The promoters in this case talk of manufacturing paper also.

Mr. George Robertson, ex-mayor of St. John, New Brunswick, says there is also to be a mill at the mouth of the St. John which will turn out 50 tons daily. The capital, chiefly Canadian and British, will be $500,000.

Mr. Robertson is very sanguine about the future of the pulp industry in New Brunswick. He says the Province has one of the finest spruce areas in the Dominion; and as to market, he points to the fact that the Lancashire district, in England, alone took over 180,000 tons last year, and that of only one kind of pulp (in the main, from Scandinavia and Bohemia). Besides Great Britain and France, he points to the ever-growing consumption in the United States. On this head, he said:

> Wood costing from $2.50 to $3, and even less, in Canada, is costing to-day $6 per cord in the United States. That country simply can not compete with Canada.

Regarding the duty, he said that while the United States now allowed wood to go in free and taxed the pulp, it was his opinion that the Canadian paper and pulp industry was assuming such proportions that in time influence could be brought to bear on this point.

The St. John Board of Trade states that the winter exports in 1898 were valued at $129,803.

The Lake Megantic Mills have given notice of an application for increased power and capital.

The Laurentide Pulp Company, at Grand Mere, has made great strides. According to recent figures, its export from Montreal alone to Great Britain, from May 4 to October 30, 1898, was: Wet weight, 17,158,000 pounds; dry weight, 9,062,620 pounds; number of bales, 64,733. The water power here is very great, being estimated at 90,000 horsepower at high water and 70,000 at low. At present, only 12,000 is generated, but it can easily be increased. The steel flume is 300 by 14 feet. Provision has been made for the laying of another tube, if required. The mill employs 800 men, and, in addition, the company controls its own lumber tracts, where some 1,400 men are at work this season. The stumpage dues to the Province are $52,000 per annum. The secretary-treasurer is Mr. R. A. Alger, jr.

The Sturgeon Falls Pulp Company controls, by arrangement with the Ontario government, 75 square miles of spruce lands on the Sturgeon River. The capital is $2,500,000, and $1,000,000 is to be spent in buildings and plant. The pulp mill was opened in October, 1898, and the first of the six proposed paper mills is in course of erection. The number of hands employed is nearly 400; output, 360,000 tons of pulp, or 120 tons per working-day. By concessions, the company is able to obtain its wood at $2 per cord.

There is an American pulp mill at Sault Ste. Marie which has unlimited water supply and a great deal of spruce close by. The output is 70 tons of dry pulp daily. The company is controlled by New York and Philadelphia capitalists and enjoys special privileges from the Ontario government with regard to cutting timber.

Table No. 9 shows the magnitude of the traffic, as evidenced by unpublished traffic returns of one section of the Canadian Pacific Railroad. In one week, over 4,800 tons were carried. A noticeable feature is the ever-increasing quantity of pulp shipped to Japan. The industry not only swells the railway's returns in this way, but also in the transport of spruce to distant mills, as exemplified in the case of the two mills on the canal basin at Niagara Falls, which pay over $50,000 annually to the Canadian roads for freight.

Pulp now being admitted from the Dominion into France at the minimum tariff, a market in that country is regarded as among the likely things of the near future. In 1895, a shipment of $2,640 was sent as a beginning.

In view of the prominent part Quebec is taking in this industry and the vigorous way in which the leading capitalists are taking the matter up, I append the remarks of an expert upon the point:

LABOR.

The condition requisite for the success of pulp industry is cheap labor. The Swedes and Norwegians, who are in Europe the masters of the industry, have cheap labor; so that in the organization of an enterprise with the view of outstripping Europe, prudence commands us not to lose sight of this fact.

In this respect, we have the conditions required for success, particularly in the region where wood and water power are found in abundance. As a matter of fact, in the eastern part of the Province of Quebec the cost of labor is scarcely higher than in Scandinavia, and if there is a slight difference it is more than compensated by the superiority of our machinery. Here, we use American machines, which are superior for the most part to those used in Sweden and Norway.

COST OF FREIGHT.

Scandinavians are cheap carriers. But in this respect, also, we are in a position to compete with them. From the ports of the Lower St. Lawrence and Bay des Chaleurs, in which ships have virtually nothing to pay, the price of freight for England, France, and Belgium is, with a slight difference, the same as from the ports of Sweden and Norway—at least according to the information I could get.

EXCEPTIONALLY ADVANTAGEOUS POSITION.

The facts just stated clearly show that, with regard to the pulp industry—principally the manufacture of mechanical pulp—the eastern part of the Province of Quebec occupies an exceptionally advantageous position, and yet it is the only part of the Province where this industry is not carried on. This is the result of the wrong opinion entertained by many business men about this industry. For want of a thorough study of the question, of a full knowledge of the reason accounting for the success or nonsuccess of certain enterprises, these men are under the impression that pulp-making is not a paying industry, and that in any case it can pay only when it is carried on in connection with paper making.

Many causes lead to this false impression. In certain places, it has been the want of a sufficient motive power, the bad quality or high price of wood, the inferiority of the machinery used, or the incompetency of the persons in charge of the enterprise. Under such conditions, failure is not a matter of wonder. The same result is to be expected in any other industry. But the main cause of failure has been the want of a profitable market. In the western part of the Province, nearly all the paper mills manufacture pulp, so that pulp mills which do not manufacture paper have no other way to sell their products but by exporting them. They ship to the United States; but this market has a twofold disadvantage. In the first place, competition is sharp, for the United States is one of the countries in which the manufacture of wood pulp is conducted on the largest scale; in the second place, the cost of freight is high, and our pulp is subjected to a duty of 10 per cent ad valorem. When the Canadian manufacturer has deducted those duties and the cost of freight from the return of the sales, there remains but very little margin for profit.

Thus is explained the opinion, unfortunately too general, that the manufacture of wood pulp is not a paying industry.

But outside of the United States there are markets where the output of our pulp mills can be sold; those of Europe are more profitable and much larger. Besides France, which can produce a part of its supply, there are Spain, Italy, Portugal, Belgium, and particularly Great Britain which have to rely on importation for the supply of their paper mills. I admit that mills located in the western part of the Province, and which have to pay heavy freight to railways to carry their products to a seaport, can not profitably ship to Europe; but as regards mills situated east of Quebec, Europe is the market par excellence, and I do not hesitate to say that when organized with a view to exportation to the European markets, the manufacture of wood pulp is one of the safest and most paying industries. On this point, I am in a position to give facts of which I have a personal knowledge.

FOREIGN MARKETS.

Mechanical pulp sells in England from $22 to $25 for spruce and $36 to $39 for aspen and poplar. In a mill provided with good machinery, located at a fair distance from a seaport, in the Lower St. Lawrence or Bay des Chaleurs, with wood at $1.50 a cord and common labor at $1 a day, mechanical pulp can be manufactured and delivered on board of ships for $10 or $12 a ton. Calculating the freight at $5, which is the maximum, the total cost of mechanical pulp, delivered in England, would amount to $15 or $17 a ton, which leaves for profit a margin of $5 to $10 a ton. In many places, the capital required for building and running a mill with a capacity for turning out from 25 to 30 tons of pulp, dry weight, per twenty-four hours, would be from $100,000 to $150,000, supposing the most improved machinery is used. The working of a mill of that capacity, calculating on an average the price of pulp at $23.50 and the cost of production at $16, would give a gross profit of $200 per day, or $60,000 a year. For a mill using aspen and poplar, the profit would be larger.

Mr. A. Kaindler, a French engineer, wrote last summer:

"After studying the question in all its forms, I have acquired the conviction that Canada, with its splendid and cheap woods, its geographical position, its power, its means of transport, its low freight, is the country which can supply mechanical pulp at the cheapest price, and the only country which can compete successfully with Sweden, Norway, and Germany."

I have recently received some additional facts in regard to the pulp industry and the enormous water power soon to be utilized to a large extent in the Province of Quebec. In the port of Quebec alone, the exports of pulp last year were valued at $79,948, as against $32,918 the year previous. But here I wish rather to call attention to the openings the Province affords for new mills to supply the growing demand.

Probably the most important district in this respect is the Lake St. John region. This is an immense hydrographic basin, whose size can best be realized by comparison. It is two and a half times as big as Holland and nearly as large as the whole State of Maine, containing 30,000 square miles (19,200,000 acres). Numerous rivers empty into the lake from the heights above, passing through primeval forests. Much of the district has been known as the sportsman's paradise, but now the eye of commerce is fixed on a tract which supplies at once the material for manufacture and the means to do it. How great the water power is may be shown by taking as an example the stream of the Great Peribonca, at the foot of the Grand Falls: Average rapidity of current, 72 feet per second; flow of water per minute, 976,013.28 cubic feet, or 7,187,192 gallons. The capabilities of such a current, when harnessed, are at least 40,000 horsepower. This is but one fall, the river within a few miles hurling itself over seven, whose accumulated forces are equal to 300,000 horsepower. Niagara's limit is set at 350,000 horsepower, and that only at a great expense, while the formation on the Peribonca is such that it is claimed the whole can be transformed at a trivial cost.

This is but a type of what we find in the whole surrounding district, as the following table shows:

River.	Motive power.	River.	Motive power.
	Horsepower.		*Horsepower.*
Great Peribonca	301,025	Ouiatchouan	33,000
Little Peribonca	1,500	Metabetchouan	2,500
Mistassibi	75,000	Belle Riviere and Aulnaies	500
Mistassini	60,000	Little Discharge	25,000
Au Rat	22,723	Grand Discharge	15,000
Assiemska	15,000	Total	653,248
Chamouchuan	100,000		
Au Saumow, aux Iroquois	2,000		

Turning from the power to the material to be manufactured, we find that out of the 19,200,000 acres, less than 500,000 are cleared, the rest being covered with forests, 75 per cent of which are white, black, and red spruce, the rest being made up chiefly of balsam fir, white birch, cypress, and pine. It will readily be seen that this immense forest stretch offers an almost inexhaustible supply of raw material.

The official forestry returns give the Swedish forests as 40,000,000 acres, the Norwegian as 17,000,000 acres, and the Prussian as 20,000,000 acres, in round numbers. As these are the chief pulp-manufacturing countries, it can easily be seen how formidable a competitor Quebec is likely to be, when one district has over 19,000,000 acres, and when its magnificent water powers are considered.

The estimated pulp wood in this district is as follows:

Region.	Area.	Pulp wood.
	Acres.	*Cords.*
Periboncа	8,320,000	41,600,000
Mistassini	4,800,000	24,000,000
Chamouchouan	3,200,000	16,000,000
Ouiatchouan	3,200,000	16,000,000
Total	19,520,000	97,600,000

This only represents the first cut. It is known that spruce forests grow up again in twenty years, and, estimating 1½ cords to the ton of pulp, it is clear that this district is able to produce 1,000,000 tons per annum for sixty-five years. So far as the quality of the pulp is concerned, it will suffice to say that a late number of the Paper Makers' Journal gave the average price of Canadian pulp in England as $24.80 per ton, and that of the Scandinavian as $20.77.

Lime is also an important element in the manufacture by the bisulphite process. This is to be found close to all the above-mentioned water powers.

On the 18th instant, Attorney-General Longley laid before the Nova Scotia legislature an agreement entered into on the 1st of last month, by which the Queen grants a thirty-year lease of two immense tracts of Crown lands, comprising altogether nearly 1,000 square miles, to three American capitalists—Edward L. Sanborn and Robert B. Blodgett, of Boston, Mass., and Daniel F. Emery, jr., of Portland, Me. The lands are leased for the purpose of converting the timber thereon into pulp and paper, and the lessees must have two such mills in operation within a period of two years and have expended at least $10,000 in the operation of the business for which the lease is granted. The lessees agree to pay the government of Nova Scotia $6,000 per year, and to do all their manufacturing within the Province. One provision of the agreement prohibits the transfer of the lease to any person or corporation except the North American Paper and Pulp Company, Limited, without the consent of the attorney-general of Nova Scotia. The government reserves the customary mining rights over all the property granted, but agrees to sell the land or any portion thereof to the lessees for the purpose set forth at 40 cents per acre, the prevailing price of Crown lands in Nova Scotia. If the terms of the agreement are fulfilled, as regards the erection of pulp or paper mills, and the same are operated through the stipulated period, the lessees may obtain a renewal of the grant for a further term of thirty years at $6,000 per year.

JOHN L. BITTINGER,
Consul-General.

MONTREAL, *April 3, 1899.*

TABLE NO. 1.—*Imports of wood pulp into the United States, showing the proportion supplied by Canada.*

Year.	Total United States imports.		From Canada.	
	Quantity.	Value.	Quantity.	Value.
	Tons, net.		*Tons, net.*	
1890	48,695	$1,814,356	7,424	$185,016
1891	48,513	1,902,689	10,555	308,078
1892	41,118	1,820,143	12,550	[illegible],658
1893	63,565	2,908,884	14,241	396,661
1894	35,587	1,664,547	10,016	323,095
1895	28,440	958,009	13,029	285,849
1896	45,143	1,052,829	29,197	417,116
1897	41,770	800,886	34,804	498,706
1898	29,846	601,642	29,846	601,642

TABLE NO. 2.—*Wood pulp imported into the United States from principal countries.*

Year.	Germany.		Norway and Sweden.		Canada.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*		*Tons.*	
1893	21,124	$1,101,018	22,552	$1,124,830	14,241	$396,661
1894	8,942	484,037	13,866	719,447	10,016	323,095
1895	5,984	275,083	7,136	306,087	13,029	285,849
1896	6,195	309,731	7,839	293,608	29,197	417,116
1897	1,783	94,574	5,019	200,761	34,804	498,706

TABLE NO. 3.—*Canadian exports of pulp wood.*

Year.	Value.	Year.	Value.
1890	$168,180	1895	$468,009
1891	280,619	1896	627,865
1892	335,303	1897	711,152
1893	455,893	1898	912,041
1894	393,260		

TABLE NO. 4.—*Canadian exports of wood pulp.*

Year.	Value.	Year.	Value.
1890	$80,005	1895	$590,874
1891	188,198	1896	675,777
1892	219,458	1897	741,959
1893	386,092	1898	1,210,421
1894	547,217		

TABLE NO. 5.—*Canadian exports by countries.*

Country.	1895.	1896.	1897.
Great Britain*	$251,848	$113,557	$164,138
France	2,640	5,135	80
Germany	1		1,000
United States	336,385	557,085	576,720
Newfoundland			21
Total	590,874	675,777	741,959

*In 1893, $1,640 worth was exported to Great Britain; in 1894, $178,255.

TABLE NO. 6.—*Pulp imports of Italy in 1896.*

From—	Quantity.	
	Quintals.	*Pounds.*
Norway and Sweden	7,393	1,629,861
United States and Canada	119	26,235
Switzerland	6,068	1,337,751

TABLE NO. 7.—*Pulp imports of various countries in 1897.*

From—	France.		Germany.		Great Britain.
	Kilograms.	*Pounds.*	*100 kilos.*	*Pounds.*	*Tons.*
Sweden	21,795,893	48,051,226	41,861	9,228,676	
Norway	44,537,556	98,185,496	2,090	460,761	239,133
Germany	4,442,379	9,793,669			
Belgium			102	22,487	
Great Britain			110	24,251	
United States			360	79,366	7,148
Canada					25,873
Other lands (now European)	345,597	761,903			149,07

TABLE NO. 8.—*Imports into France in 1897.**

Kind of pulp.	Quantity.		Value.	
	Kilograms.	*Pounds.*	*Francs.*	
Wood pulp	74,083,749	163,325,033	10,742,144	$1,073,234
Chemical pulp	41,687,062	91,903,297	14,590,472	2,815,961

*According to a statement by Hector Fabre.

TABLE NO. 9.—*Pulp shipped over central section of Canadian Pacific Railroad for third week of January, 1899.*

From—	To—	Weight.
		Pounds.
Rockford (ex Lebanon siding)	Corinth	512,000
Eastman	do	280,000
Bury	do	2,640,000
Scotstown	do	1,080,000
Gould	do	470,000
Springhill	do	1,080,000
Megantic	do	2,020,000
McLeods	Boston	210,000
Eastman	Bellows Falls	60,000
Sault Ste. Marie, Ontario	Vancouver	458,400
Do	Sault Ste. Marie, Mich	852,550
Total		9,662,950

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